

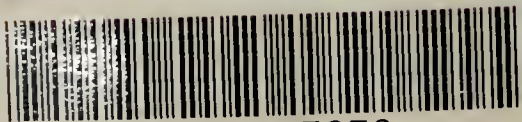


FIJI.

COUNCIL PAPER, No. 40,

F.A. 48/4/19. pt. 3.

ANNUAL
MEDICAL AND HEALTH REPORT
FOR THE YEAR
1938.



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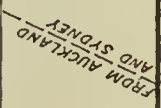
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ANNUAL
MEDICAL AND HEALTH REPORT
FOR THE YEAR
1938.

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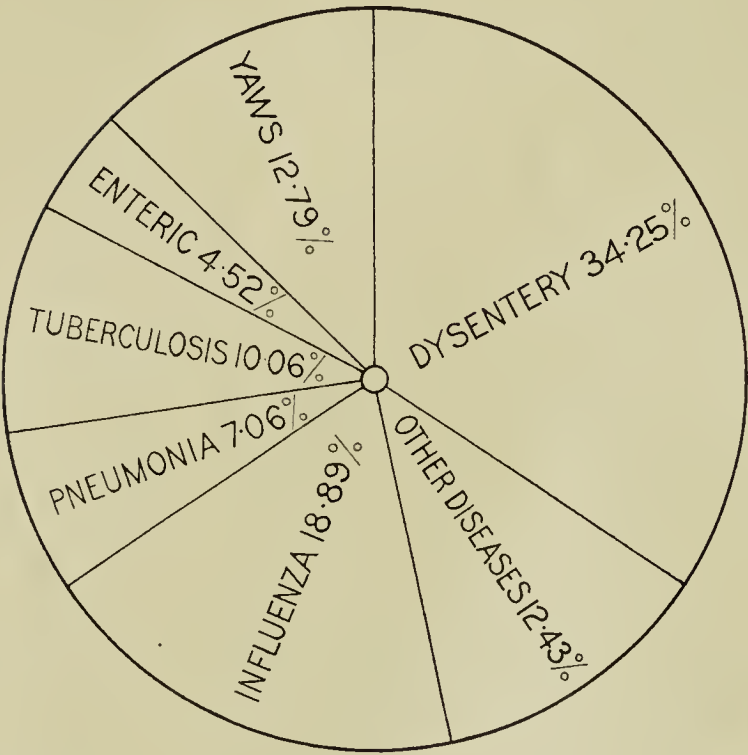
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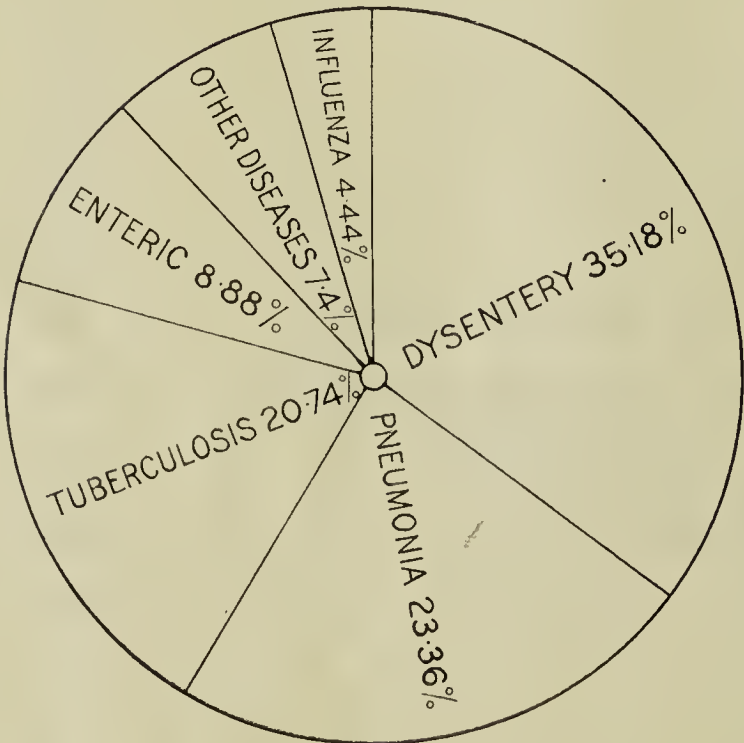
THE DIAGRAMS SHOW THE RELATIVE INCIDENCE OF DIFFERENT DISEASES CAUSING ADMISSION TO, AND DEATHS IN, HOSPITALS OF THE COLONY DURING 1938.

INFECTIVE DISEASES.

TOTAL INCIDENCE, 3,446.

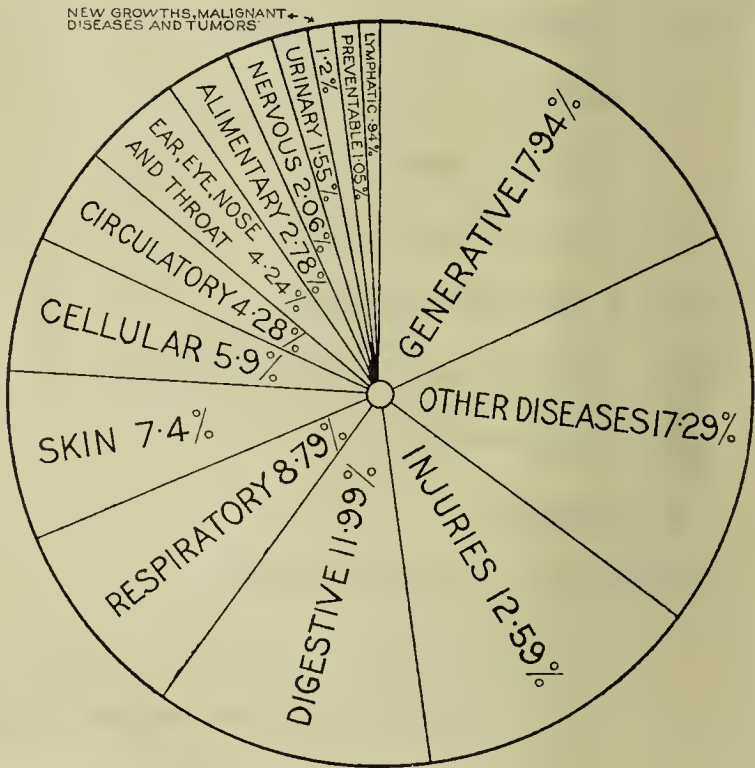


TOTAL DEATHS, 270.

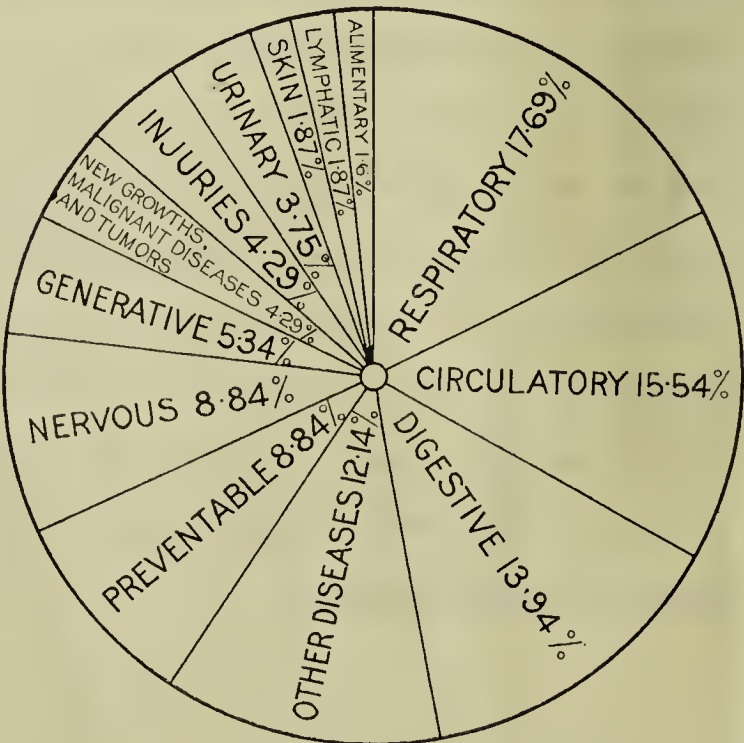


GENERAL SYSTEMIC AND PREVENTABLE DISEASES.

TOTAL CASES, 8,148.



TOTAL DEATHS, 373.



1939.

LEGISLATIVE COUNCIL,

FIJI.

COUNCIL PAPER, No. 40.

F.A. 48/4/19 pt. 3.

Medical Department

(ANNUAL REPORT FOR 1938.)

THE DIRECTOR OF MEDICAL SERVICES TO THE HON. THE COLONIAL SECRETARY.

Sir,

Suva, 14th August, 1939.

I have the honour to submit, for the information of His Excellency the Governor, and for transmission to the Right Honourable the Secretary of State, the Medical Report on the Health and Sanitary conditions prevailing in the Colony of Fiji for the year 1938, together with the returns appended thereto.

I have, &c.,

V. W. T. MCGUSTY,
Director of Medical Services.

I.—ADMINISTRATION.

1. In addition to the statement showing the total revenue and expenditure of the Medical Department, this and subsequent annual reports will contain as close an approximation as possible to the financial situation within each of the main subdivisions of administration, hospitals and dispensaries, and public health. Medical educational services are still unavoidably included in the subdivision of hospitals and dispensaries.

2. The total revenue of the Medical Department for 1938 was £12,128. The total expenditure on all medical services, excluding capital expenditure, was £93,825 representing 9·6 per cent. of the Colony's total expenditure of £977,957, the nett cost per head of population being 7s. 11½d. The apportionment of revenue and expenditure to the three main subdivisions of the medical services of the Colony was as follows:—

- (i) *Administration*.—The nett expenditure under this heading amounted to £2,217, and was made up of the salaries of the Director of Medical Services and the headquarters office staff. The appointment of Assistant Director of Medical Services remained unfilled throughout the year.
- (ii) *Hospitals and Dispensaries*.—Revenue, which amounted to £11,195, includes hospital fees and other contributions from various sources which are detailed in Appendix D. Expenditure, which amounted to £64,600, includes the salaries of two Medical Officers posted at the Colonial War Memorial Hospital, and one moiety of the salaries of officials whose duties are partly curative and partly preventive, namely all Medical Officers posted in country districts, all Native Medical Practitioners, and the Nursing Superintendent whose responsibilities extend to both hospital and public health nursing. It also includes the Government Pharmacy and all the other costs connected with the maintenance of hospitals, including the Mental and Leper Hospitals.
- (iii) *Public Health*.—Revenue amounted to £933. Expenditure, which amounted to £27,008, included the full salaries of the Medical Officer of Health, Pathologist and laboratory staff, sanitary staff, infant welfare staff, and one moiety each of the salaries of all Native Medical Practitioners, Government Medical Officers posted in country districts and of the Nursing Superintendent. The expenditure on all public health services represents a proportion of 2·9 per cent. of the Colony's total expenditure.

A.—STAFF.

Appointments.—Dr. V. W. T. McGusty, Acting Director of Medical Services, Fiji, 1st January; Dr. G. R. Baxter, Medical Officer of Health, Suva, 21st February; E. A. Bunge, Sanitary Overseer, Suva, 2nd August; A. J. Burke, Temporary Assistant Government Pharmacist, Suva, 7th July; Dr. J. Taylor, Medical Officer, 16th August; Dr. A. G. Hemsley, Assistant Medical Officer, Colonial War Memorial Hospital, 15th October; A. J. Burke, Acting Government Pharmacist, Suva, 13th August; Dr. V. W. T. McGusty, Director of Medical Services, Fiji, 7th August; Miss A. Robins, Clerk, Medical Department, 1st November; Dr. W. L. Isaac, Temporary Medical Officer, Fiji, 28th June.

Nurses appointed on Secondment from the New Zealand Government.—Miss I. Renshaw, Sister, Lautoka Hospital, 15th July; Miss G. E. Graham, Staff Sister, Colonial War Memorial Hospital, 25th July.

Expiration of Agreement.—Miss M. Young, Sister, Lautoka Hospital, 19th June.

New Appointments.—Miss O. M. Flemons, Probationer Nurse, Colonial War Memorial Hospital, 1st May; Miss G. E. Morgan, Probationer Nurse, Colonial War Memorial Hospital, 14th June; Miss M. Bruce, Probationer Nurse, Colonial War Memorial Hospital, 25th July; Miss D. I. Webb, Probationer Nurse, Colonial War Memorial Hospital, 25th July; Miss E. M. Webb, Probationer Nurse, Colonial War Memorial Hospital, 18th August; Miss J. M. Gordon, Probationer Nurse, Colonial War Memorial Hospital, 6th September; Rev. Sister Mary Anna, Nursing Sister, Makogai Leper Hospital, 16th September.

Resignations.—Miss A. K. Dally, Probationer Nurse, Colonial War Memorial Hospital, 3rd June; Miss J. d'Emden, Probationer Nurse, Colonial War Memorial Hospital, 1st June; Miss M. Hardy, X-Ray Nurse, Colonial War Memorial Hospital, 15th October; Miss M. I. McLeod, Probationer Nurse, Colonial War Memorial Hospital, 1st June; Miss M. Harcourt, Clerk, Medical Department, 11th December; P. Burge, Clerk, Makogai Leper Hospital, 29th July.

Retirements.—Dr. A. H. B. Pearce, Director of Medical Services, Fiji, 7th August; Dr. F. Widlake, Medical Officer, Fiji, 20th October; Mrs. A. F. Lindsay, Attendant, Mental Hospital, 1st October.

B.—LEGISLATION AFFECTING PUBLIC HEALTH AND MEDICAL SERVICES
ENACTED DURING THE YEAR.*Ordinances*—

No. 2 of 1938—Quarantine Amendment Ordinance.

No. 22 of 1938—Pharmacy and Poisons Amendment Ordinance.

Proclamation—

No. 7 of 1938—Regulating the sale of methyilmorphine (commonly known as codeine) and ethylmorphine (commonly known as dionin).

Regulations—

Regulations made under the Dangerous Drugs Ordinance 1937.

Regulations made under the Dangerous Drugs Ordinance 1937, regulating the supply of opium to addicts.

Regulations made under the Pharmacy and Poisons Ordinance 1937.

Poisons (Industrial and Agricultural) Regulations.

Regulations made under the Public Health Ordinance 1935 amending Regulations relating to erection of dwelling-houses.

Regulations made under the Quarantine Ordinance 1928 amending Regulations relating to Fumigation services.

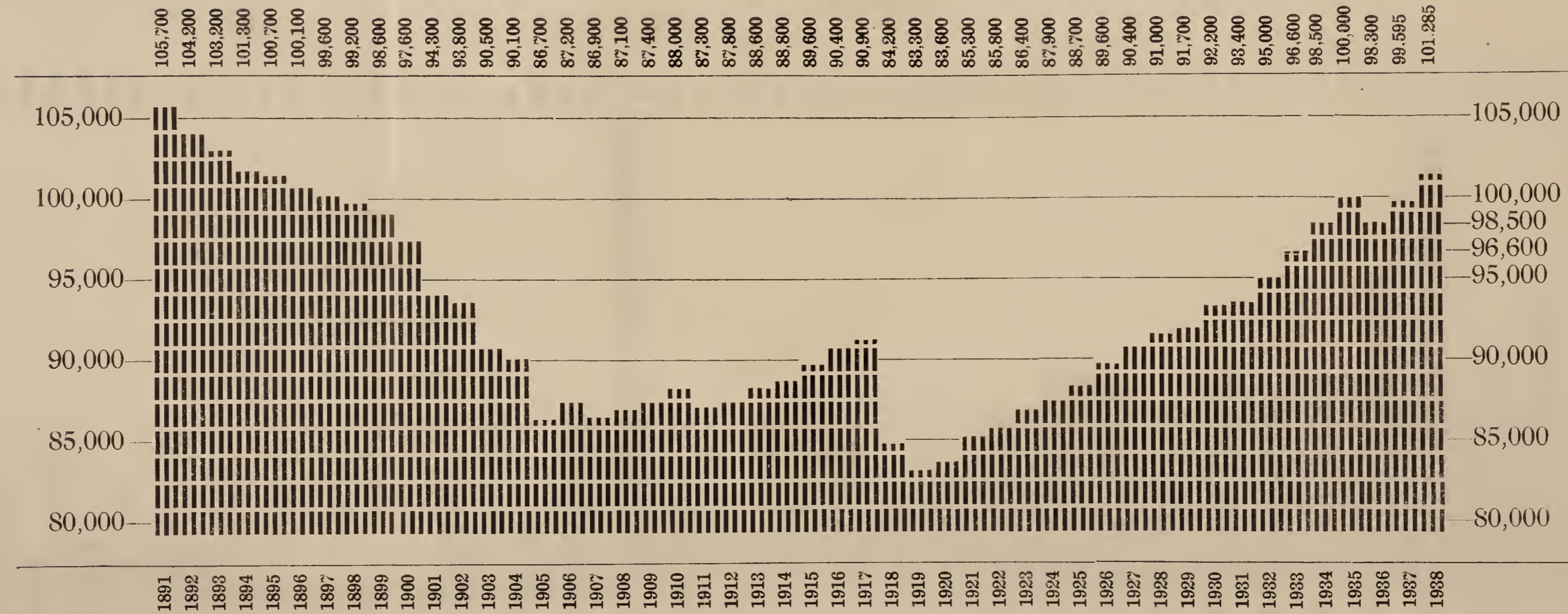
II.—PUBLIC HEALTH.

A.—ADMINISTRATION.

3. The curative and public health services are jointly controlled by the Director of Medical Services. He is *ex officio* Chairman of the Central Board of Health which advises Government on all health matters, and holds executive powers in areas where there are no Local Authorities. The Local Authorities, now under the chairmanship of the District Commissioners with the Medical Officers as *ex officio* members, are responsible for the administration of public health in the areas assigned to them, and have power to make their own by-laws. The Public Health Ordinance is not applicable to the communally living Fijian, whose public health is administered under a special chapter in the code of Native Regulations. The Fijian health services are co-ordinated with the others through the Government Medical Officers, who are the responsible health officials in both cases. There is one full-time Medical Officer of Health, and notwithstanding the fact that his authority is limited to the port, town and environs of Suva, a special importance attaches to his office as a centre for the co-ordination of the public health work of the Colony as a whole. A decision was announced by Government that, with effect from some date in 1939, a Medical Officer with public health training, and having his headquarters in Nadroga, would be appointed to perform the duties of Medical Officer of that district conjointly with those of Medical Officer of Health of the Northern Electoral Division. Within the public health area which it is proposed to assign to this officer, there are several growing townships, proclaimed or unproclaimed, as well as the largest industrial undertakings in the Colony. This particular combination of curative with preventive duties is rendered possible by local circumstances, and is a necessary step in the expansion of the public health service. The Government Medical Officers in country districts are all *ex officio* Medical Officers of Health. The sanitary staff consists of a Chief Sanitary Inspector and three other qualified sanitary inspectors, four sanitary overseers and thirteen sanitary assistants. In order to lend encouragement to the local communities to compete for the sanitary posts, there is now under consideration a proposal to seek the assistance of the Royal Sanitary Institute in the matter of arranging for holding local examinations to qualify for posts in the two upper grades.

GRAPH A.

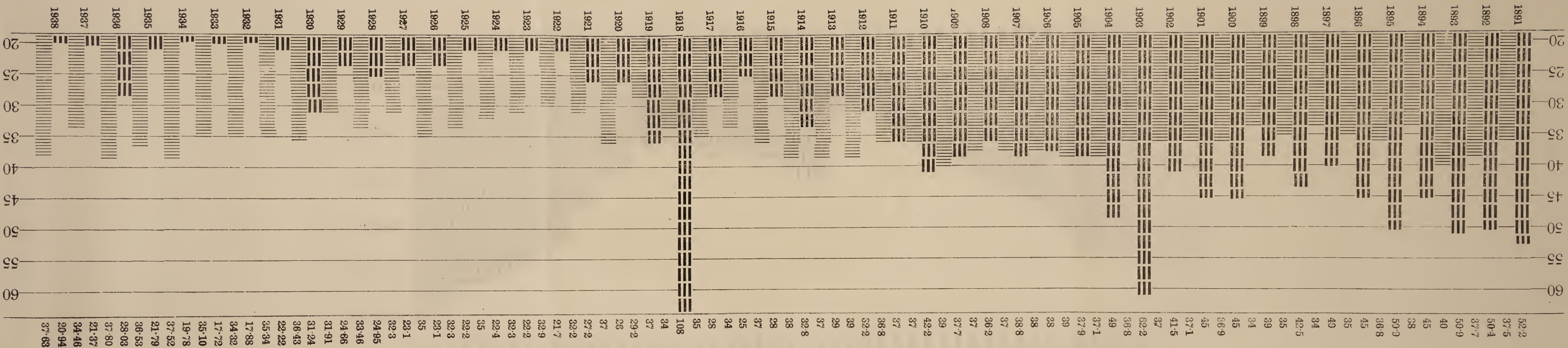
SHOWING THE DECREASE AND INCREASE IN THE FIJIAN RACE FOR THE LAST 48 YEARS.



GRAPH B.

SHOWING THE DEATH AND BIRTH RATE IN THE FIJIAN RACE FOR THE LAST 48 YEARS.

Note.—The thick perpendicular lines indicate the rise and fall in the death-rate; the thin horizontal lines show the rise and fall in the birth-rate



B.—INFANT WELFARE.

4. The Fijian Infant Welfare campaign was inaugurated by Government on a Colony wide basis on the 1st January, 1927, on account of the relatively high infant mortality rate of the native as compared with the non-native communities. In order that it might gain the confidence and support of the Fijians the organisation was conducted as a branch of the Native Administration from its inception until the 1st January, 1938, when it was considered that the conditions were fulfilled for its transference to the Medical Department. Close co-operation with the Native Administration will continue to be maintained in the essential interests of the work. It is a matter for satisfaction that coincident with the change of control, a native welfare area comprising the Yasanas (formerly called provinces) of Nadroga and Colo West, of which Miss E. B. Geeves is the nurse in charge, took second place in the Imperial Baby Week Challenge Shield Competition. Indeed, the system under which the work has been carried out appears to be reasonably satisfactory for it observes the principle of delegating a progressively increasing amount of responsibility to the Fijians. It has effected a great improvement in the outward appearance of the children, and it has raised the standard of environmental hygiene in the villages. These facts, however, notwithstanding it has to be admitted that twelve years of concentrated effort have brought about no appreciable improvement in the Fijian infant mortality rate. In ascertaining the cause of this and searching out a remedy, it is advisable as a first step to compare the Fijian infant mortality rate with the rates of other tropical communities. In the following table the figures of the Fijians are shown in their relationship to those of six other places:—

INFANTILE MORTALITY RATE PER THOUSAND FOR YEAR 1937.

Fiji (Fijians only)	..	..	..	..	..	..	96.44
Fiji (average for whole population)	..	..	..	..	..	..	74.55
Sierra Leone	..	..	..	..	..	..	246.
Jamaica	..	..	..	..	..	..	119.
Cyprus	..	..	..	..	..	..	159.3
Mauritius	..	..	..	..	..	..	154.5
Straits Settlements and Federated Malay States	..	from	113.	in Kelantan			
		to	219.	in Brunei			

As the figures of the other places quoted relate to their respective total populations, those of Fiji contain separate quotations for the indigenous Fijians and for the total population respectively. This table shows how favourable the position of the Fijians would be if it could be judged solely by its relationship to that of other tropical countries, but, unfortunately, there is also a local standard, and the similarity of conditions which it provides makes it, of necessity, the basis upon which any final judgment must be pronounced. This inescapable standard is, in fact, the infant mortality rates under one year of the Indian community and of the people of mixed European and Fijian descent, which are shown side by side with the Fijians in the following comparative table:—

INFANTILE MORTALITY RATE UNDER ONE YEAR FOR THE PAST FIVE YEARS.

	1934 Rate per thousand births.	1935 Rate per thousand births.	1936 Rate per thousand births.	1937 Rate per thousand births.	1938 Rate per thousand births.
Fijians	126.35	126.51	140.51	96.44	107.06
East Indians	82.95	63.24	81.23	55.70	76.75
People of mixed European and Fijian Descent	55.55	49.38	62.5	53.33	56.96

Finally any survey must still be incomplete without the comparative information regarding the death rates of all children under five years old, which is contained in the following table:—

CHILD MORTALITY RATE UNDER FIVE YEARS FOR THE PAST FIVE YEARS.

	1934 Rate per thousand births.	1935 Rate per thousand births.	1936 Rate per thousand births.	1937 Rate per thousand births.	1938 Rate per thousand births.
Fijians	204.81	224.53	278.87	204.54	210.7
East Indians	105.55	81.31	118.54	86.98	103.89
People of mixed European and Fijian Descent	111.11	74.07	150.00	80.00	88.6

In the absence of any obvious factor operating to the particular disadvantage of the Fijians, their relatively high infant mortality rate and especially the excessive number of deaths of children under five years old cannot be regarded with complaisance as something that is unavoidable, and it must, indeed, be attributed to a low standard of motherhood in the Fijian women associated with more or less general racial inanition, conditions which are very difficult to combat. It is realised that the remedy must be sought in moral as well as material measures and, for this reason, the assistance of the Christian missions has been invited and readily given in attacking those obstacles to progress which are psychological as well as social in their nature. At the same time it is confidently hoped that the existing child welfare organisation will be strengthened when proposals to increase and improve the facilities for teaching public health, now under consideration by Government, attain fruition.

C.—COMMUNICABLE DISEASES.

5. There were 213 cases of typhoid fever with 24 deaths. Nowadays the outbreaks of this disease are more or less confined to low lying agricultural areas having no reticulated water supplies. Control is effected chiefly by the isolation of cases and by the inoculation of all contacts. Dysentery, of which 1,667 cases with 95 deaths were notified, occurred in epidemic form in one district only during the early part of the year, and while in later months the case incidence was higher and the disease was more widespread than is usual at that period, it failed actually to become epidemic. Dysentery outbreaks are usually traceable to Indian peasantry living in areas subject to floods, whose drinking water is obtained from shallow subsoil wells which become polluted with surface washings during the rainy season. The public health officials have to exercise constant vigilance in the regions which are subject to outbreaks of typhoid and dysentery because in them are generally found conditions unfavourable to good soil sanitation. Ankylostomiasis of a mild degree is constantly present along the river valleys and in the wet regions, but it is not markedly prevalent in either of the mining areas. In the infested regions measures have been adopted to control the disease by microscopic surveys and treatment where necessary, and the continuance of soil sanitation. Yaws has become a relatively rare disease, and only 3,236 cases were recorded for the year. Its treatment with arsenical compounds was undoubtedly the most powerful of all the influences which have broken down native opposition to western medicine.

6. There were 372 cases of tuberculosis notified during the year with 56 deaths, but this number cannot be accepted as a true indication of the prevalence of this disease. Indeed, it is impossible in the existing circumstances to obtain reliable information regarding the dissemination of tuberculosis in the community. An interesting account of a tuberculin survey of some of the native areas by a Native Medical Practitioner is given, on page 38, in the annual report of Dr. S. M. Lambert, local representative of the Rockefeller Foundation. In commenting on the results of this field survey, Dr. Lambert very correctly issues the following warning:—

“It must be clearly understood that a positive tuberculin test does not mean necessarily that the patient has clinical tuberculosis. It does mean that he has or has had an infection with tuberculosis which may be a minute lesion or larger lesions which are active or it may mean he has recovered entirely from it.”

7. The publicity which tuberculosis has received in the world's press has had its repercussions in Fiji, where there are many ill-considered assumptions regarding its prevalence, its prevention and its treatment. A memorandum on this subject is published on page 43.

8. The increase in industrial development that has taken place in recent years has added greatly to the opportunities for infecting the Fijians with gonorrhœa, and while there is still no evidence of a serious increase in the incidence of that disease, the necessity for constant vigilance by the medical and public health staffs is realised. It has been observed that gonorrhœa, when it occurs in the Fijians, runs an unusually mild course and is rarely attended by sequelæ such as stricture. It seems possible that there may be some connection between this fact and the habit, common to all South Sea Islanders, of drinking kava, a beverage which possesses both diuretic and astringent properties. Syphilis is now a relatively uncommon disease of which no case appears to have been reported in a native Fijian. There are treatment centres for venereal diseases at the office of the Medical Officer of Health in Suva, as well as the medical headquarters of all country districts.

9. The addition to the Colony's industries of gold mining has caused Government to decide upon a medical survey of mine employees with special reference to the presence or otherwise of silicosis. This survey will be undertaken in the course of the year 1939.

III.—HYGIENE AND SANITATION.

10. The sanitation of the port, town and environs of Suva has been discussed very fully by the Medical Officer of Health on page 15. The population of the actual town at the 1936 census was 8,394 to which, from the public health point of view, there must be added a further 7,128 made up of suburban residents. Formerly the sanitation of the town and that of its suburbs was undertaken as separate services, which were co-ordinated under the direction and control of the Medical Officer of Health on the 1st January, 1938. In spite of its many advantages Suva suffers all the defects of a tropical town that has been allowed to grow without thought or plan for its future, and so it has come about that some of its principal streets are crooked and narrow; presentable buildings are found side by side with the most dilapidated ones, and overcrowding in inferior houses with defective sanitary accommodation exists almost in the centre of the town. Housing and sanitary conditions are, indeed, at their worst in the area known as Toorak, which, with the exercise of a little foresight, would have been reserved for the best class of residential houses. These insanitary conditions co-exist with a general shortage of houses affecting all classes, which acts as a serious deterrent to the public health staff in their efforts to maintain the sanitation of the town at a satisfactory level because the enforcement, in the present circumstances, of the Public Health Regulations would exacerbate the housing shortage, cause rents to soar, and possibly drive away an essential part of the town's labour supply. The situation is known to Government which, with the Town Board, is seeking to find a permanent remedy. Among proposals which have either been adopted or are still under consideration are the direct assistance that is being given to the development of the Indian suburban settlement at Samabula, and the decision to establish a model suburban village to accommodate Fijians who are permanently or temporarily connected with the town.

11. Whatever has to be said of Suva's faults, they are no greater than those of many other towns of its size in both tropical and temperate countries, nor should they be allowed to obscure Suva's natural advantages and the steady progress of recent years which is evident in a better class of building, better sanitation, greater facilities for recreation, and the beautification of its streets with trees and flowers. In addition to existing improvements, there are others under immediate contemplation which include new markets, street widening, and the preparation of a

plan upon which the town's future expansion will be modelled. It is fitting to the capital of Fiji and the principal town and crossroads of the Southern Pacific that its natural beauty should be enhanced by the most careful town planning.

12. Suva is still the only town in the Colony within the meaning of the Towns Ordinance of 1935, but there are three townships, proclaimed as such under the Townships Ordinance 1928, namely Lautoka, Levuka and Nausori. The proclamation as townships of areas where such a step is justified by existing or anticipated densities of population has proved an effective means of maintaining adequate sanitary services and controlling expansion. This fact is clearly demonstrated in the illustrations at page 15. The difficulty which has existed in preventing overcrowding and the uncontrolled growth of settlements has now been finally overcome by the passing of the Subdivision of Lands Ordinance 1938.

13. During recent years a special soil sanitation campaign has been directed towards the provision on an economic basis for the whole population of an adequate number of effective latrines. Suva alone has its system of water borne sewage, while a relatively small, though increasing number of other places, have septic tank installations. The pan system persists only where there is unavoidable delay in providing a substitute, and the great bulk of the population is dependent upon either the pit or borehole type of latrine. Experience has proved the borehole suitable for individual households, and it is in general use among the Indian peasantry. For communal use a pit has been found essential, and, with few exceptions, this type is common to the Fijian villages. The cement slab or cover is an essential in both instances, and slabs are manufactured and sold at a cheap rate under the direction of the soil sanitation campaign. The covers are eagerly sought after by all classes, and they have played an important part in furthering the work of the campaign. After the installation has been completed it can be maintained without difficulty to its owners, but is liable to be neglected in the absence of inspection by the sanitary authorities. The extensive work already done has reduced the opportunities for the dissemination of the common intestinal infection and has played an important part in educating the community in environmental hygiene.

IV.—HOSPITALS AND DISPENSARIES.

14. The Colonial War Memorial Hospital, situated within the boundaries of Suva less than a mile from the General Post Office, is progressively attaining to higher standards in all its activities, which include the teaching of medical and nursing students. A new nurses' home, an attractive building in ferro-concrete, of which an illustration appears at page 22 and a new children's ward were formally opened on the 19th July by Lady Richards, wife of the then Governor. These constitute an important part of the scheme of improvements which was accepted by Government in 1937, and it is hoped that they will soon be followed by a new hostel for the medical students, a health centre in a building which will also house a new hospital out-patient department, a modern building to house a greatly enlarged school for non-European nurses, and isolation, obstetric and mental observation sections, and a new laundry which will provide a complete hot water service and steam sterilisation for the entire hospital. Among the improvements and extensions also contemplated in existing services are the enlargement of the X-Ray section, to which has now been added a portable plant, and improved and increased lavatory accommodation in several of the wards. The hospital of which the activities for the year are described on page 22 now contains 183 beds and cots. Its medical staff consists of two full-time officers of whom the senior is, since the re-organisation of the Public Service, styled Medical Officer in Charge. Neither post is intended to be permanent, and neither now carries any emoluments or allowances additional to the salary of a Government Medical Officer. The nursing staff consists of a Matron, Assistant Matron, 11 trained nurses, 13 probationer nurses, 2 qualified native obstetric nurses and 23 native pupil nurses. The admissions for the year numbered 2,573 and the attendances at the out-patient department 30,143. Closely associated with the hospital are the Pathological Laboratory and the Central Medical School.

15. Although the Colonial War Memorial Hospital was built as recently as 1923, its site, extending to $11\frac{1}{2}$ acres, from the viewpoint of its expansion, has proved a most unfortunate choice for it is traversed over most of its extent by a deep and winding ravine with sides too steep to build on without the most costly excavation. There is, therefore, but little order in the setting out of the component parts of the hospital, nor can there be orderly planning for its future expansion. Nevertheless the hospital, medical school and laboratory are institutions which bring credit to the Colony.

16. There has been no change in the structure or form of administration of the Lautoka Hospital, and its expansion is likely to be curtailed should the proposal now under consideration by Government to build a hospital in Ba, some 24 miles distant from Lautoka, materialise in the near future. This hospital contains 72 beds, and is staffed by one Medical Officer, four trained nurses, seven qualified native nurses and twelve native pupil nurses. Admissions for the year numbered 2,442 and attendance at the out-patient department 10,139.

17. The Labasa Hospital has 40 beds and is under the charge of the Medical Officer of the Macuata District. Its nursing staff consists of two trained nurses and three native nurses. A new block containing quarters for the Sister in Charge and accommodation for private patients was under construction at the end of the year.

18. Of the remaining hospitals, two in Ba and one each at Levuka and Taveuni have trained nurses attached to them, while the remaining 16 are maintained and staffed as auxiliary hospitals only, serving their most useful purpose in times of epidemics.

19. There is an effective chain of dispensaries of which the units are based on the hospitals. Most of them are staffed by Native Medical Practitioners, a few only by Indian Medical Practitioners, and with a few exceptions they are supervised by Government Medical Officers. There are out-patient branches connected with all the hospitals, and excluding these there were 31 dispensaries scattered throughout the whole Colony at the end of the year. It is difficult to see how a better organisation could be devised to meet the needs of a population inhabiting 80 separate islands.

V.—NURSING SERVICES.

20. Experience during the year under review provided still further evidence of the advantage which accrues to this Colony from the association of its nursing services with those of the Dominion of New Zealand. The classification of all nurses employed in the Government Service during 1938 was as follows:—

Matron and Nursing Superintendent	1
Matron (Lautoka Hospital)	1
Assistant Matron	1
Sisters in Charge	2
Staff Sister	1
X-Ray Nurse	1
Nurse Housekeeper	1
Sisters	11
Staff Nurses	3
Probationer Nurses	13
Senior Native Nurse	1
Native Obstetric Nurses	73
Fijian Infant Welfare Scheme—	
European Nurses	5
Native Nurses	15
Central Leper Hospital, Makogai—	
European Nursing Sisters	15
Native Nursing Sisters.. .. .	10
Mental Hospital—	
European Female Attendant	1
Native Female Atendants	6

While it is inseparable from the conditions now appertaining in this Colony not to combine in some measure curative and preventive duties in all classes of nurses, the following may be accepted as a reasonable statement of the distribution of personnel as between the hospital and public health branches:—

A.—HOSPITAL SERVICES.

(i) Trained Nurses (including the Nursing Superintendent)	38
(ii) Probationer Nurses	13
(iii) Trained Native Nurses	38
(iv) Pupil Native Nurses	35

B.—PUBLIC HEALTH SERVICES.

(i) Trained Nurses	5
(ii) Trained Native Nurses	67

21. The Matron of the Colonial War Memorial Hospital, in her capacity of Nursing Superintendent, is now responsible for the supervision of all Government nursing services, the infant welfare staff having been handed over to her charge on the 1st January, 1938. The duties of Matron of the Colonial War Memorial Hospital, which are tutorial as well as administrative, have become exceedingly onerous, and it will be of marked advantage when staff conditions permit this officer to devote more of her time to inspection duties than is now at all feasible. The value attaching to contact in the actual field with the public health workers was clearly demonstrated in the results of such tours as the Nursing Superintendent was able to make during the course of the year. It may be said that the co-ordination of the nursing services is steadily becoming more effective.

VI.—MEDICAL EDUCATION.

22. *The Central Medical School* report for the year 1938 is published on page 27. The school completed the tenth year of its co-operative existence on the 31st December with, I believe, results that justify the hopes of those who regarded it as the solution of the health problems of the scattered Pacific Islands and their respective and relatively impecunious administrations. The Principal is a medically qualified official whose full time is devoted to administrative and teaching duties at the school, where there are also twelve honorary lecturers. Government has already approved of the replacement of the existing Students' Hostel with a larger and better one, and as the site of the present hostel is required for a new Health Centre, the building of the new hostel on a new site is likely to be begun as soon as circumstances permit. The establishment of a new Health Centre will follow as soon as possible the completion of the new Students' Hostel, and will provide, among other things, the extended and improved facilities, including a teaching museum, which are urgently needed to supplement the laboratory and other services in the teaching of public health. As the result of a visit paid to the Colony in September by Dr. G. K. Strode, Director of the Rockefeller Foundation, a generous contribution towards the cost of the Health Centre is likely to be made by the Foundation.

23. *Nurses' Training Schools.*—There is local provision for training two grades of nurses. The higher is for the certificate of general nursing, which is recognised in other countries. The other is for the diploma of Native Obstetric Nurse, which is of local application only. The extension and improvement of the facilities for training non-European nurses, to which reference has been made in previous annual reports, has been brought a step nearer to its accomplishment by the decision of Government to accept an offer of the Rockefeller Foundation to provide for a chosen member of the Fiji Nursing service a studentship in tutorial nursing and allied subjects. The Nurses' training schools, like the Central Medical School, will become very closely associated with the Health Centre.

24. *Public Health Education* of the general community includes all school children, and is undertaken as part of the duties of all public health and school officials, supported in most cases by Government administrative officers. Experience is showing that if the health education of young children of the peasant classes is to be effective, it must be reduced to the simplest and most practical forms.

VII.—LABORATORY DIVISION.

25. A survey of the work done in the laboratory during the year is contained on page 26. While the presence of a laboratory has conferred great benefits on the local communities, the progressive increase in its routine duties, which is inevitable once a service of this kind becomes established, makes it impossible for its normal staff to engage itself to any appreciable extent in research. It seems to be inseparable, too, from the conditions appertaining in a small service, that an officer holding the post of Government Pathologist should be used as a spare part for other branches even though this be done at the expense of the work of his substantive post. It is, indeed, realised that the individual Medical Officers of all grades in the Service are too fully occupied with their normal duties to undertake any serious research work, and so Government has made it known that the admirable facilities of its laboratory, as well as the potentially fruitful field which these islands provide for medical research, are at the disposal of any duly authorised workers whose emoluments will not be a charge against this Colony.

26. Foremost among the problems that await investigation is nutrition, for it is becoming clear that without special temporary arrangements as to staff, only the fringe of this subject can be touched by the existing establishment. The activities of the Nutrition Committee, which was appointed in 1936, have necessarily been confined to the gleanings of preliminary information from schools and other sources, and to ascertaining the deficiencies, if any, in dietary scales now approved for issue in Government institutions, to Government employees and to labourers. Both the Government Pathologist and the Government Chemist have recently undergone instruction in dietetics and food analysis.

VIII.—PRISONS AND MENTAL HOSPITAL.

27. In addition to the central gaol at Suva there are prisons attached to the headquarters of all country stations which are used chiefly for short term prisoners. These country prisons have, as far as possible, been subjected to regular inspections by Medical Officers, and have been maintained in a satisfactory condition. It is generally observed that in spite of discipline and hard work the physical and mental condition of prisoners undergoes a rapid improvement as a result of a wholesome diet and regular hours, and that this improvement is maintained throughout the period of their detention.

28. The central gaol in Suva is well constructed as regards all its departments and is maintained in a cleanly condition which is a credit to the responsible officials and an asset in the preservation of the health of the inmates. During the year under review there were 85 admissions to the gaol infirmary while 107 prisoners were treated as out-patients for minor ailments. The only infectious diseases were seven cases of influenza and two of dysentery, and there were no cases of diseases due to food deficiency. The diet of the prisoners was amended in the following respects—the addition of green vegetables to the diet of all prisoners on admission instead of, as formerly, after the elapse of six months, and also the provision of cheese and butter fat. There is an Indian Medical Practitioner in permanent residence at the gaol, which is also visited three times weekly by a visiting medical officer.

29. There is only one Mental Hospital in the Colony. It is situated in Suva and occupies one of the finest sites in the neighbourhood of the town, and provides accommodation for its inmates in buildings which conform on the whole with modern standards. The Mental Hospital grounds which are protected by high fences are spacious enough to provide ample room for exercise and recreation for the patients. The institution is under the immediate charge of a head attendant and his assistant, both Europeans, and under them there is a staff of warders and wardresses, all natives of Samoa selected on account of the special aptitude of the people of those islands for the duties of attending on persons of unsound mind. The buildings and their surroundings were well maintained throughout the year in their usual sanitary condition and considering the characteristics of the inmates it is largely to the credit of those responsible for their welfare that they remained free from sickness, and that no cases of epidemic disease occurred among them during the year. The Mental Hospital is regularly visited by the visiting medical officer and periodically inspected by a Board of Visitors. The total number of patients treated during the year was 121, of whom 87 had remained over from 1937 and 34 were new admissions. Fifteen patients were discharged unconditionally, and one was discharged on trial. There were 21 deaths and 83 patients remained at the end of the year.

IX.—METEOROLOGICAL.

30. The total rainfall at Suva for 1938 was 158·85 inches, compared with the average of 120·16 over a period of 54 years. The wettest month was December, when 30·52 inches fell and the driest month was June, when 4·84 inches were recorded. There were 260 wet days, the wettest being December 21st, when 10·62 inches fell.

X.—GENERAL.

DANGEROUS DRUGS ORDINANCE 1937.

31. Permits to withdraw from the Dangerous Drugs Store were granted for the following in 1938:—Cocaine Hydrochloride, 31 grs.; Liquor Opii B.P., 20 fluid ounces; Liquor Opii Conc. (1–8), 40 fluid ounces; Liquor Opii Conc. pro Tinc. (1–15), 120 fluid ounces; Morphine Hydrochloride, 1 ounce; Chlorodyne, 54 fluid ounces.

V. W. T. MCGUSTY,
Director of Medical Services.

APPENDIX A.

VITAL STATISTICS.

The graphs A and B, introduced in the Annual Report, 1932, have been extended for 1938.

The estimated population at the end of 1937 and 1938 was:—

Race.	Males, 1938.	Females, 1938.	Total, 1938.	Total, 1937.	Increase.	Increase per cent.	Decrease.	Decrease per cent.
Europeans	2,245	1,943	4,188	4,238	....	....	50	1·18
P.M.E.N.D.*	2,481	2,398	4,879	4,756	123	2·59	....	....
Fijians.. ..	51,499	49,786	101,285	99,595	1,690	1·70	....	....
Rotumans (all races)	1,494	1,473	2,967	2,915	52	1·78	....	....
East Indians	51,862	40,447	92,309	89,333	2,976	3·33	....	....
Polynesians	1,085	552	1,637	1,567	70	4·47	....	....
Chinese	1,640	339	1,979	1,837	142	7·73	....	....
Others	663	611	1,274	1,156	118	10·21	....	....
Total ..	112,969	97,549	210,518	205,397	5,171	2·52	50	1·18

The number of births recorded during the last four years was:—

Race.	1935.	1936.	1937.	1938.	Crude birth-rate per 1,000, 1938.
Europeans	62	64	71	56	13·27
P.M.E.N.D.*	162	160	150	158	32·38
Fijians	3,652	3,715	3,432	3,811	37·63
Rotumans	132	109	129	129	43·48
East Indians	3,210	3,484	3,357	3,648	39·52
Polynesians	54	26	74	21	12·83
Chinese	23	20	18	34	17·18
Others	35	56	53	122	95·76
Total ..	7,330	7,634	7,284	7,979	37·90

The general birth-rate in 1937 was 35·46.

The number of deaths recorded during the past four years was:—

Race.	1935.	1936.	1937.	1938.	Crude death-rate per 1,000, 1937.
Europeans	34	33	36	38	9·07
P.M.E.N.D.*	33	52	40	35	7·17
Fijians	2,178	2,755	2,128	2,121	20·94
Rotumans	69	67	58	77	25·95
East Indians	716	1,069	901	1,034	11·20
Polynesians	44	45	42	49	29·93
Chinese	10	15	6	17	8·59
Others	7	20	14	17	13·34
Total ..	3,091	4,056	3,225	3,388	16·09

The general death-rate for 1937 was 15·70.

The marriages, births, deaths and natural increase for 1938 were:—

Race.	Marriages.	Births.	Deaths.	Increase.	Decrease.
Europeans	32	56	38	18	..
P.M.E.N.D.*	41	158	35	123	..
Fijians.. ..	808	3,811	2,121	1,690	..
Rotumans	19	129	77	52	..
East Indians	888	3,648	1,034	2,614	..
Polynesians	11	21	49	..	28
Chinese .. ..	..	34	17	17	..
Others	19	122	17	105	..
Total ..	1,818	7,979	3,388	4,619	28

The rates of natural increases were:—Europeans, 4·25 per thousand; P.M.E.N.D.*, 25·86; Fijians, 16·97; Indians, 29·26; Chinese, 9·25. The natural increase of all races was 22·35 per thousand.

* Persons of Mixed European and Native Descent.

INFANTILE MORTALITY, 1938.

Race.				No. of deaths under 1 year.	Rate per 1,000 births.
Europeans ..	..	..	..	5	89·28
P.M.E.N.D.*	..	..	..	9	56·96
Fijians ..	..	..	..	408	107·06
East Indians	..	..	..	280	76·75
Polynesians	..	..	..	5	238·09
Others ..	..	..	..	10	81·96
Rotumans ..	..	..	..	18	139·53
Total ..				735	92·12

* Persons of Mixed European and Native descent.

HEALTH STATISTICS OF EUROPEAN AND NON-EUROPEAN OFFICIALS 1938.

	<i>Europeans.</i>	<i>Non-Europeans.</i>
Total number of officials resident	431	685
Average number resident	345	615
Total number on sick list	118	214
Total number of days on sick list	969	1,348
Average daily number on sick list	2·654	3·693
Percentage of average daily number of sick to average number resident	·769	·601
Average number of days on sick list for each patient ..	8·212	6·299
Average sick time for each resident	2·248	1·967
Total number invalided out of the Colony	4	1
Percentage of invalidings to total residents	·928	·584
Total deaths	2	3
Percentage of deaths to total residents	·464	·292
Percentage of deaths to total average number of residents ..	·597	·488

APPENDIX B.

COLONIAL WAR MEMORIAL HOSPITAL.

RETURN SHOWING THE EXPENDITURE AND REVENUE IN EACH OF THE LAST TEN YEARS AND THE COST PER BED OCCUPIED

Year.	In-patients.	Daily average in hospital.	Expenditure	Cost per head per day. Personal Emoluments	Cost per head per day. Other Charges.	Cost per head per day. Total.	Patients fees received.	Fees, if paid, of patients treated gratuitously
			£ s. d.	d.	d.	d.	£ s. d.	£ s. d.
1929	2,464	80·3	11,029 0 0	42·3	48·0	90·3	1,534 11 5	3,097 15 0
1930	2,805	87·51	10,976 18 2	39·2	43·4	82·6	1,377 0 9	4,551 4 0
1931	2,303	87·04	10,690 19 1	43·8	36·9	80·5	1,628 6 5	3,278 0 0
1932	2,345	95·2	11,085 5 5	40·5	35·2	75·7	2,098 3 7	6,662 5 0
1933	2,509	104·83	11,382 19 6	38·4	33·1	71·5	2,067 5 3	5,497 18 10
1934	2,398	106·45	11,762 7 0	37·7	34·9	72·6	1,999 17 7	5,428 18 2
1935	2,713	118·07	12,237 16 10	31·92	36·22	68·14	2,245 4 4	5,421 1 0
1936	3,074	124·83	12,970 8 8	30·76	37·66	68·42	2,038 8 8	6,109 11 0
1937	2,679	106·71	11,513 10 10	28·25	42·70	70·95	2,143 3 9	6,025 9 0
1938	2,573	105·18	13,060 15 2	38·78	42·87	81·65	1,795 7 1	5,600 4 0

Remarks.—Salaries of the Medical Officers are included. The expenditure on the Central Medical School is not included. The cost of drugs used for out-patients is included. The expenditure under Works Department votes is not included.

LAUTOKA HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND THE COST PER BED OCCUPIED.

Year.	Average daily number in hospital.	Expenditure.	Cost per head per day.		Total.
			Personal Emoluments	Other Charges.	
		£ s. d.	d.	d.	d.
1934	49·0	3,366 14 1	13·2	32·0	45·2
1935	49·83	3,419 17 0	15·95	29·18	45·13
1936	50·0	3,557 18 0	14·74	29·92	44·66
1937	60·4	4,036 15 4	14·55	29·39	43·94
1938	64·8	3,974 7 7	14·37	25·97	40·34

Remarks.—Does not include salaries of Medical Officers or of expenditure under Public Works Department. Cost of all drugs used is included.

LEVUKA HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND THE COST PER BED OCCUPIED

Year.	Average daily number in hospital.	Expenditure.	Cost per head per day.		Total
			Personal Emoluments	Other Charges.	
		£ s. d.	d.	d.	d.
1934	8·16	956 19 7	25·2	51·8	77·0
1935	11·11	982 2 6	19·62	38·61	58·23
1936	11·02	1,014 5 8	18·42	41·92	60·34
1937	9·9	1,102 14 9	22·2	51·0	73·2
1938	12·9	1,186 5 5	21·55	38·91	60·46

Remarks.—Does not include salaries of Medical Officers or expenditure under Public Works Department.
Cost of all drugs used is included.

LABASA HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND COST PER BED OCCUPIED.

Year.	Average daily number in hospital.	Expenditure.	Cost per head per day.		Total.
			Personal Emoluments.	Other Charges.	
		£ s. d.	d.	d.	d.
1934	14·67	1,212 5 9	18·6	35·0	53·6
1935	20·05	1,485 8 7	13·91	34·81	48·72
1936	34·22	1,591 8 0	7·88	22·59	30·47
1937	29·6	1,576 10 10	9·1	25·9	35·0
1938	35·99	1,706 0 2	9·08	22·26	31·34

Remarks.—Does not include salaries of Medical Officers or expenditure under Public Works Department.
Cost of all drugs used is included.

MENTAL HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND COST PER BED OCCUPIED.

Year.	Average daily number in asylum.	Expenditure.	Cost per head per day.		Total
			Personal Emoluments	Other Charges.	
		£ s. d.	d.	d.	d.
1934	79·0	3,261 10 7	12·8	14·4	27·2
1935	77·0	3,462 1 6	14·87	14·7	29·57
1936	83·7	3,628 9 0	13·78	14·65	28·43
1937	86·6	3,607 8 0	13·1	14·3	27·4
1938	85·8	3,713 16 11	13·65	14·81	28·46

Remarks.—Expenditure under Public Works Department votes and Medical Officers salaries not included.

MAKOGAI CENTRAL LEPER HOSPITAL.

RETURN OF EXPENDITURE FOR EACH OF THE PAST FIVE YEARS AND THE COST PER PATIENT PER DIEM.

Year.	Average daily number in Hospital.	Expenditure.	Cost per head per day.		Total
			Personal Emoluments	Other Charges.	
		£ s. d.	d.	d.	d.
1934	448·25	13,292 18 10	7·06	12·44	19·5
1935	510·29	13,359 13 10	5·89	11·32	17·21
1936	571·35	14,072 11 8	5·45	10·67	16·12
1937	572·98	14,290 15 5	5·23	11·17	16·4
1938	565·35	14,862 10 1	5·11	12·7	17·28

Remarks.—Does not include expenditure under Public Works Department votes which was in 1937, £1,806 3s. 11d., on maintenance and £2,977 16s. 8d. on permanent improvements, and in 1938, £1,941 4s. 4d., on maintenance and £2,598 17s. 9d. on permanent improvements.

RETURN SHOWING DAILY COST PER BED OCCUPIED DURING 1937 AND
1938 OF THE HOSPITALS OF THE COLONY.

Hospital.	1937.		1938.	
	Aver. daily No. in Hosp.	Cost per head per day.	Aver. daily No. in Hosp.	Cost per head per day.
		s. d.		s. d.
Colonial War Mem. Hospital	106·71	5 10·95	105·18	6 9·65
Lautoka Hospital	60·4	3 7·94	64·8	3 4·34
Central Leper Hospital ..	572·98	1 4·4	565·35	1 5·28
Levuka Hospital	9·9	6 1·2	12·9	5 0·46
Labasa Hospital	29·6	2 11·0	35·99	2 7·34
Mental Hospital	86·6	2 3·4	85·8	2 4·46
Penang Hospital	10·69	2 3·12	11·56	2 2·59
Nadi	12·34	2 9·55	13·31	2 6·38
Ba	14·76	1 4·32	24·9	0 11·21
Taveuni	24·2	1 2·87	27·3	2 0·1
Rewa	19·34	1 7·96	21·82	1 3·
Kadavu	8·56	2 4·85	11·51	1 7·81
Nadroga	5·00	4 10·8	8·21	3 0·42
Ra	8·76	3 7·38	9·70	2 8·97
Bua	3·12	6 3·64	5·76	3 2·71
Savusavu	6·2	3 2·4	7·31	3 5·04
Lau (Lomaloma)	12·00	1 8·5	11·56	2 4·01
Colo East	9·92	1 6·14	9·68	1 9·8
Rotuma	6·72	3 2·1	6·66	3 10·39

APPENDIX C.

VALUE OF ISSUES FROM THE GOVERNMENT PHARMACY DURING 1938.

1. Medical Department—

A—Hospitals and Dispensaries—

	£	s.	d.	£	s.	d.
Bau	21	15	7			
Beqa	22	13	7			
Children's Ward	431	9	0			
Cikobia	9	10	0			
Colonial War Memorial Hospital ..	2,575	2	0			
C.W.M.H. Nurses' Home	233	14	7			
Davuilevu	36	7	9			
Draiba	2	12	7			
Dreketi	37	2	0			
Gau	32	1	2			
Kadavu	131	4	4			
Koro	33	1	4			
Korolevu i wai	35	2	11			
Korovou, Tailevu	26	3	9			
Labasa	667	5	10			
Lakeba	118	10	5			
Lautoka	1,011	1	6			
Lekutu	59	1	10			
Levuka	263	18	10			
Lodoni	27	6	2			
Lomaloma	40	8	5			
Matuku	24	19	10			
Moala	23	9	1			
Momi	25	19	4			
Mount Kasi	95	8	11			
Nabouwalu	81	10	8			
Nadarivatu	37	14	2			
Nadi	196	11	9			
Nadrau	10	16	11			
Nadroga	134	2	10			
Naduri	30	15	1			
Naduruloulou	19	18	11			
Nailaga	138	14	0			
Nakasaleka	38	0	9			
Namarai	44	2	5			
Namata	16	2	0			
Namosi	18	18	0			
Nanukuloa	189	12	11			
Nasau	29	9	5			
Natewa	56	14	0			

Carried forward .. 7,028 15 3

A—Hospitals and Dispensaries—*continued*—

				£	s.	d.	£	s.	d.
	Brought forward	..		7,028	15	3			
Natuatuacoko	..	..	..	21	4	4			
Nausori	..	..	..	9	9	11			
Navatusila	..	..	..	12	4	1			
Navua	..	..	..	88	12	6			
Nayavu	..	..	..	60	10	1			
Penang	..	..	..	168	19	2			
Qalialatina	..	..	..	14	3	5			
Rewa	..	..	..	39	18	8			
Rotuma	..	..	..	184	3	7			
Savu Savu	..	..	..	196	3	7			
Serua	..	..	..	17	11	4			
Taveuni	..	..	..	507	17	11			
Tavua	..	..	..	67	7	10			
Veitogo	..	..	..	32	6	5			
Viria	..	..	..	41	2	3			
Visoqo	..	..	..	21	0	3			
Vunidawa	..	..	..	80	3	1			
Wainibokasi	..	..	..	194	4	3			
Wainikoro	..	..	..	12	6	9			
Wainunu	..	..	..	45	14	1			
Yasawa	..	..	..	59	11	0			
Total Hospitals and Dispensaries				....			8,903	9	9
B—Native Obstetric Nurses				..	..	....	36	4	0
C—Public Institutions—									
Mental Hospital	..	..	..	285	16	9			
Central Leper Hospital	..	..	..	1,181	12	2			
Total Public Institutions				..	....		1,467	8	11
D—Typhoid Immunization Campaign—									
Labasa	..	..	..	11	5	0			
Levuka	..	..	..	13	10	0			
Nadroga	..	..	..	29	12	6			
North West Viti Levu	..	..	..	345	9	5			
Rewa	..	..	..	36	7	6			
Savu Savu	..	..	..	33	15	0			
Suva	..	..	..	61	6	8			
Total Typhoid Immunization				..	....		531	6	1
E—Other Medical				..	..	....	567	18	9
F—Fijian Infant Welfare Scheme				..	..	....	489	11	3
Total Medical				..	..	....	11,995	18	9
2. Other Government Departments—									
Schools	..	..	..	82	0	4			
Police	..	..	..	3	19	4			
Gaol Infirmary	..	..	..	52	7	3			
3. Other Government Departments				..	..	245 15 2			
Total Government Departments				....			384	2	1
4. Native Lands Commission Surveyors				..	..	....	0	19	9
5. Missions				..	..	....	62	19	3
6. Private Accounts				..	..	....	170	8	0
Total Issues from Government Pharmacy				....			12,614	7	10

RECEIPTS.

Medicine Licences	..	..	..	23	10	0			
Poison Licences	..	..	..	7	0	0			
Total				..	....		30	10	0

APPENDIX D.

REVENUE, MEDICAL DEPARTMENT.

Head IV—	1937	1938.
1. (i) Dairy Licences, Suva and Levuka ..	£40 5 0	66 0 0
4. Drug Permits	15 5 0	37 10 0
Head V—		
20. Hospital Fees, Colonial War Memorial Hospital, Levuka, Labasa & Lautoka Hospitals	3,802 7 9	2,579 4 11
22. Meat Inspection Fees	472 5 0	468 16 6
23. Central Leper Hospital Fees	5,180 18 8	5,534 6 8
24. Fees, Plantation Labourers, Lautoka and Labasa Hospitals	1,000 0 0	800 0 0
25. Central Medical School	1,813 9 2	1,736 10 0
Head IX—		
2—(a) Makaluva and Nukulau Fees ..	107 14 6	117 9 2
(b) Sale of Government Drugs.. .. .	169 4 9	179 13 6
(c) Fumigation and Disinfection Fees	255 2 3	238 7 11
(d) Sale of Stock and General Fees ..	21 5 0	41 16 6
3. Sale of Produce, Makogai	140 18 2	62 15 7
4. Bakery Receipts Makogai	201 13 2	255 9 2
9. Ten per cent. Profits Makogai Canteen .	11 10 11	10 3 7
Total	£13,231 19 4	£12,128 3 6

APPENDIX E.

ESTABLISHMENT.

The Medical Staff of the Colony as sanctioned for the year 1938 was:—

Administrative.—Director of Medical Services, 1; Assistant Director of Medical Services, 1; Government Pharmacist, 1; European Male Grade A Clerk, 1; European Male Grade B Clerk, 1; European Female Grade B Clerk, 1; Non-European Grade B Clerks, 3; Packers, 2; Messenger, 1.

Medical.—Medical Officers, 13; Native Medical Practitioners, 63; Indian Medical Practitioners, 7; Native Obstetric Nurses, 63.

Colonial War Memorial Hospital.—Medical Officer in Charge, 1; Assistant Medical Officer, 1; Native Dispenser, 1; Matron and Nursing Superintendent, 1; Assistant Matron, 1; Staff Sister, 1; Sisters, 8; Staff Nurses, 2; Probationer Nurses, 13; Nurse Housekeeper, 1; Steward and Clerk, 1; Senior Native Nurse, 1; Non-European Grade B Clerk, 1; X-Ray Nurse, 1; Mechanic, 1; Night Attendants, 2; Hall porter, 1; Seamstress, 1; Servants, 27.

Levuka Hospital.—Staff Sister, 1; Native Dispenser, 1; Native Nurse, 1; Servants, 5.

Mental Hospital.—Head Attendant, 1; Assistant Attendant, 1; Female Attendant, 1; Native Attendant, Grade I, 1; Native Attendants, Grade II, 14; Servants, 2.

Central Leper Hospital.—Medical Officer, 1; European Male Grade B Clerk, 1; Overseer, 1; Nursing Sisters, 15; Native Nursing Sisters, 10; Bakers, 4; Constables, 3; Leper Patients employed as Servants, Headmen, Headwomen or School Teachers, 12; Servants, 19.

Lautoka Hospital.—Matron, 1; Native Medical Practitioners, 2; Sisters, 3; Native Nurses, 7; Servants, 12.

Labasa Hospital.—Staff Sister, 1; Native Medical Practitioner, 1; Native Nurses, 2; Servants, 6.

MEDICAL STAFF POSTINGS.

The Medical Staff postings on 31st December, 1938 were:—

Director of Medical Services.

V. W. T. McGusty, O.B.E., B.A., M.B., Ch.B., D.T.M. & H. (Liv.).

Pathological and Research Division.

D. C. M. Macpherson, M.B., Ch.B. (Glasgow), D.T.M. (Liverpool), C.P.H. (Johns Hopkins), Pathologist, on leave.

W. L. Isaac, M.R.C.S. (England), L.R.C.P. (London), Acting Pathologist.

Sanitary Division.

G. R. Baxter, M.D. (Leeds), B.Ch.D., D.P.H. (Leeds), D.T.M. D.T.H., (Liverpool), Medical Officer of Health.

Central Leper Hospital, Makogai.

C. J. Austin, M.B., Ch.B. (Edin.), Medical Superintendent, Makogai.

Central Medical School.

D. W. Hoodless, B.Sc. (Lond.), L.M.S.S.A., Principal.

Colonial War Memorial Hospital.

E. V. Maxwell, M.B., Ch.B. (N.Z.), Medical Officer in Charge.

A. G. Hemsley, M.R.C.S. (England), L.R.C.P. (London), D.T.M. & H. (Eng.), Assistant Medical Officer.

Medical Officers.

A. J. Borg, M.D. (Malta), Ba district.

H. S. Evans, B.A. (Cantab.), M.R.C.S., L.R.C.P., Rewa district.

T. Clunie, M.B., Ch.B. (Aberdeen), D.T.M. (Sydney), Labasa District.

W. G. Macnaughton, M.B., Ch.B. (Glas.), Taveuni District.

G. T. Barnes, M.B., Ch.B. (Birmingham), D.T.M. & H. (Eng.), Ra district.

W. Worger, M.R.C.S. (London), L.R.C.P. (Eng.), Lautoka district.

J. S. Cramer, M.B., Ch.B. (Edin.), F.R.F.P. & S. (Glasgow), L.R.C.P. & S. (Edin.), Nadroga district.

J. Taylor, M.B., Ch.B. (Glasgow), D.P.H. (Lond.), D.T.M. & H. (Eng.), Levuka district.

J. A. R. Dovi, M.B., Ch.B. (N.Z.), Savu Savu district.

Medical Officers on Leave.

P. T. Harper, M.D. (Dunelm), M.R.C.S., L.R.C.P.

M. L. McCauley, M.B., Ch.B., B.A.O. (Dublin).

R. J. Snodgrass, L.D.S. (Edin.), L.R.C.P. & S. (Edin.), F.R.F.P. & S. (Glasgow).

R. W. D. Maxwell, M.B., Ch.B. (N.Z.).

Leave.—Dr. A. H. B. Pearce, 7th January to 7th August; Miss A. M. Walton, 3rd March to 17th June; Mrs. A. F. Lindsay, 2nd March to 30th August; Dr. F. Widlake, 20th May to 20th October; Miss G. Faddy, 23rd June to 21st December; M. Samuels, 1st July to 1st October; Dr. Macpherson, 30th June to 31st December; D. K. Palmer, 13th August to 31st December; C. A. Brabant, 18th August to 31st December; Mrs. M. Wright, 3rd March to 8th September; Miss A. B. Montgomery, 27th September to 31st December; Miss M. Cleary, 7th October to 31st December; Dr. R. Maxwell, 13th October to 31st December; K. W. A. Black, 11th November to 31st December; C. Kendrick, 28th September to 31st December; Miss M. Harcourt, 3rd October to 11th December; Miss M. McKavanagh, 7th January to 7th July; Dr. R. J. Snodgrass, 4th February to 31st December; Miss H. Young, 22nd January to 5th July; Rev. Sister Flavie, 16th September to 31st December; Rev. Sister Germaine, 16th September to 31st December.



A STREET IN NAUSORI TOWNSHIP, 1936.



THE SAME STREET AFTER THE NEW PUBLIC HEALTH REGULATIONS CAME INTO FORCE, 1937.



SUVA GARBAGE LORRY AT THE TOWN REFUSE DUMP, ILLUSTRATING HOW IT IS USED FOR HEALTH PROPAGANDA.



OLD TYPE OF SMALL DWELLING—COMPARE WITH NEW TYPE SHOWN BELOW.



NEW TYPE OF SMALL DWELLING.



NEW HEALTH OFFICE IN SUVA, OPENED NOVEMBER, 1938.

REPORT BY Dr. G. R. BAXTER, MEDICAL OFFICER OF HEALTH AND PORT HEALTH OFFICER, ON THE WORK OF THE SANITARY DIVISION IN 1938.

I have the honour to submit the report of the work of the Health Branch of the Medical Department with which I am concerned, for the year 1938.

2. *Staff*.—Dr. D. C. M. Macpherson acted as Medical Officer of Health from January 1st until March 2nd.

Dr. G. R. Baxter arrived in the Colony and assumed duty as Medical Officer of Health on March 3rd.

Mr. C. Kendrick, Chief Sanitary Inspector and Secretary of the Central Board of Health, was absent from his duties owing to serious illness from September 28th. He has been absent from the Colony on sick leave from 8th December. His duties were taken over by Mr. W. C. Cockell.

Miss Harcourt ceased duty as clerk, prior to resignation, on October 3rd.

Mrs. Nelson assumed duty as clerk on October 1st.

Mr. Mathew Samuels resigned from the staff, his resignation taking effect from January 7th, 1939.

Mr. Bunge was appointed as a Sanitary Overseer on August 2nd, for work largely in connection with dairies.

Mr. S. E. Martin, Sanitary Overseer, was taken for duties at Makaluva and the Colonial War Memorial Hospital and ceased duties at the Health Office on October 28th.

3. *Public Health Legislation*.—The following legislation came into force during the year:—

Suva Town (Regulation of Markets) By-laws 1938.

Suva Town (Subdivision of Land) By-laws 1938.

Quarantine Regulations, 1938.

Quarantine (Amendment) Regulations, 1938.

Suva Town (Building) Amendment Regulations, No. 1 and No. 2.

Public Health Amendment Regulations, 1938.

Subdivision of Lands Regulations, 1938.

4. *General*.—The Medical Officer of Health is an official member of the Suva Town Board, and Chairman of the Health Committee. He also acts as adviser to the Central Board of Health, and is a member of the Subdivision of Lands Board and the Town Planning Board.

The year has seen the opening of the new health office, which has accommodation for the officials of the Central Board of Health and the sanitary officers of the Town Board. The health activities of the Town Board now come under the control of the Government Medical Officer of Health—a most important advance. The new offices are up-to-date and in keeping with the health organisation essential in the main port of the Colony.

5. *Vital Statistics*.—

Estimated population	..	..	..	..	..	..	..	210,518
Number of births	..	..	..	..	..	..	..	7,979
Number of deaths	..	..	..	..	..	..	..	3,388
Birth rate (per 1,000 population)	..	..	..	..	..	..	..	37.9
Death rate (per 1,000 population)	..	..	..	..	..	..	..	16.1
Infantile mortality rate (per 1,000 births)	..	..	..	..	..	..	..	92.1
Fijian infantile mortality rate (per 1,000 Fijian births)	..	..	..	..	..	..	..	107.06
Indian infantile mortality rate (per 1,000 Indian births)	..	..	..	..	..	..	..	76.7

The infantile mortality rates are low for a tropical country, and indicate how fortunate Fiji is in escaping the usual diseases of the tropics. The figures will be brought lower with the advance of education, and child welfare work. The birth rate and death rate figures are very satisfactory.

6. *Infectious Diseases*.—Bacillary dysentery and typhoid are the chief endemic diseases. The figures for these two diseases for years to come will be an excellent index of the advance of sanitation, both as regards the incidence in the districts and the monthly incidence throughout the Colony. Tables are given showing the notification of infectious diseases separated into:—

- (1) incidence in the various districts;
- (2) racial incidence;
- (3) monthly incidence.

Enteric Fever.—The figures make interesting reading, especially those relating to districts. The cases are much more common in the rural districts, which lack for the most part proper water supplies and which have poor sanitation. Ba, Tavua, Lautoka, and Nadroga are the places mainly affected.

Total cases, 213. The case incidence of typhoid is 1.01 per 1,000 population. The case mortality of typhoid is 3.3 per cent.

The smaller figures compared with dysentery are probably due to anti-typhoid injections. The seasonal incidence is interesting, there being a sharp outbreak about March—about the time when flies are most prevalent.

Anti-typhoid inoculations are given to all contacts when cases are reported, and this is the chief means of controlling the disease. The number of people receiving anti-typhoid inoculations in Suva district was 302. Typhoid outbreaks will disappear as sanitation advances, and as proper water supplies are made available.

Dysentery.—There has been a considerable amount of bacillary dysentery—mainly of a very mild type. As with enteric, the returns from districts reflect the density of population and the lack of sanitation and water supplies. Thus Ba and Tavua with the mines and concentration of labour, have the most cases. In Suva itself the distribution of cases is interesting, by far the largest numbers occurring in the unsewered areas, and where sanitary conditions are least satisfactory—e.g., Toorak district and the Flagstaff area.

Nasinu seems the worst district in Suva rural area, accounting for 6 of the 11 deaths from this disease: another instance of the association of flies, faulty sanitation, and lack of water supplies with dysentery.

In spite of the prevalence of flies it was impossible to buy a simple and inexpensive type of fly trap in Suva during the outbreak of dysentery which occurred towards the end of the year.

Total cases, 1,621. The case incidence of bacillary dysentery is 7·7 per 1,000 population. The case mortality of bacillary dysentery is 4·7 per cent.

The disease was most prevalent in the early months and in the later months of the year—showing considerable decline in June, July and August. Almost all the cases were of the Flexner type. A few cases of the Shiga or severe form of the disease occurred in the early part of the year.

Amæbic Dysentery.—This is comparatively rare, only 46 cases in all being reported during the year.

Ankylostomiasis (Hookworm).—This disease of bad sanitation is also endemic in Fiji—especially in Savu Savu and Taveuni—both lacking sufficient trained native staff for adequate regular sanitary inspections.

Total cases, 1,168. The case incidence of hookworm is 5·5 per 1,000 population.

The district figures emphasise the need for proper latrine provision in these outlying areas. In addition, sanitary supervision is necessary to see that the latrines are maintained in a satisfactory condition. The number of cases receiving treatment from the Health Office was 11.

Pulmonary Tuberculosis.—This disease acts as an indication of housing conditions. It is comparatively frequent as the following figures show.

Total cases for the year, 322. The case incidence of pulmonary tuberculosis is 1·5 per 1,000 population.

It is almost as common amongst the Indians as the Fijians and seems fairly uniform throughout the Colony. It is assisted by the pernicious spitting habits of the people and by the dark Fijian dwellings and damp earth floors of their houses. The wet climate and lack of drying facilities must have a good deal to do with chest diseases in children and old people.

Dengue.—In spite of the high incidence of compounds found breeding *stegomyia* mosquitoes (about 30—50 per cent.) notifications of this disease have been very few. The possibility of the numerous cases of severe “influenza” like conditions being mosquito-borne should not be forgotten.

Filariasis (Elephantiasis).—In certain districts this condition is common. This disease is also mosquito-borne, the carrier being the *Culex* mosquito which is found in abundance in all parts of Fiji, including Suva.

I have already commented upon the desirability of not permitting passengers suffering from this disease to land in Suva, which is comparatively free from this condition. The combination of seed, suitable soil, and the insect carrier, is not one that should be encouraged.

Leprosy.—There were eight cases notified during the year:—

Number of examinations of discharged lepers	11
Number of examinations of contacts	36
Number of examinations of suspected lepers	8

The leper barge has been maintained satisfactorily. The provision of better means of transport to and from Makogai is under consideration. Discharged lepers from Makogai were housed, fed and repatriated. The question of a leper clearing station is also receiving attention.

Measles.—There has been practically no measles during the year.

Tokelau Ringworm (Tinca imbricata).—The figures for this disease are high in certain districts. I am of opinion that much may be due to unsatisfactory Fijian housing conditions. Whilst by no means desiring to impose European standards upon the people, a great deal could be done to improve the floors and lighting, &c., of native huts. Damp floors and soiled mats, and dark huts which are impossible to keep clean or dry, must play their part in the causation of this skin disease. Curing the disease is of little avail if patients return to their old insanitary housing conditions.

Whooping Cough.—This seems to have been prevalent throughout the year and throughout the Colony. Its incidence seems almost the opposite of dysentery, the disease being most prevalent in the middle of the year—in the drier months.

Diphtheria.—There were two cases with two deaths. In connection with this disease there were some 352 throat swabs taken for bacteriological examination, and 32 children received treatment for immunisation against diphtheria. Many cases had positive throat swabs, with no clinical evidence of diphtheria.

Chicken-pox.—There were 57 cases notified; about the same as the previous year.

Small-pox.—There were no cases of small-pox throughout the year. The possibility of its introduction must not be forgotten. During the year, 1,139 vaccinations were done in Suva district, compared with 10 for the previous year. Of these, 828 were successful, a percentage of 88 per cent. Regular vaccination is being carried out as a routine measure in all the schools.

General measures against infectious diseases included:—

Visits of inquiry in connection with infectious disease	332
Premises disinfected or disinfested	160
Articles disinfected at disinfecting station	1,265

7. *Port Health Work and Administration*.—By reason of its geographical position, Fiji is exempt from Malaria and yellow fever. The country is most suitable for the development of the anopheline mosquito if once it gains a foothold, and the incidence of the *stegomyia* mosquito in the towns and rural districts would result in a widespread epidemic if ever infected mosquitoes or an unsuspected case of yellow fever were introduced. The rigorous precautions taken to protect Fiji from these two dangers should never be relaxed, and the threat of danger from aerial navigation should never be forgotten.

Special attention was given to vessels from ports where quarantinable diseases were prevalent.

Passengers on the immigrant ship, the "Ganges" from India, were subject to special quarantine measures at the quarantine station, Nukulau.

The Port Health organisation and routine work is a matter to be proud of in Fiji. It compares very favourably with that in places considerably larger. The following details are given:—

Number of overseas vessels boarded	..	..	..	..	155
Number of vessels inspected for mosquitoes	..	..	..	..	26
Medical inspection of passengers	..	..	..	..	3,393
Medical inspection of crews	..	..	..	..	2,887
Number of overseas vessels fumigated	..	..	..	..	12
Number of local vessels fumigated	..	..	..	..	79
Number of International deratisation certificates issued	..	..	..	..	11

Anti-plague and anti-rat measures.—

Number of rats destroyed on overseas vessels	..	82
Number of rats destroyed on local vessels	..	79

In addition to the fumigation of vessels, a rat-catcher is employed in trapping rats, especially in the vicinity of the wharves. The following figures are given:—

Number of traps set	..	..	..	..	7,401
Number of rats caught	..	..	..	..	2,211
Number of rats sent for bacteriological examinations	..	..	..	..	378

All gave negative results for *B. pestis*. Visits to wharves are made to ensure that satisfactory rat-guards are placed on mooring ropes. The sanitary arrangements of local vessels frequently leave much to be desired. The crew's quarters and sanitary arrangements of many overseas cargo ships are often most unsatisfactory.

The compulsory fumigation of local vessels has been the means of reducing not only the rat population but also cockroaches and other vermin. It is much appreciated by the crews. The standard fumigant used is hydrocyanic acid gas, either by cyanide units or potassium cyanide with sulphuric acid. This work is extremely dangerous and is carried out most efficiently by native assistants under European supervision. Both deserve to be congratulated on their efforts.

Disinfection of Imported Articles.—This is carried out as occasion arises. The steam and formalin disinfecting plant installed in the new premises will greatly facilitate this work in future. Second-hand clothing, &c., are the articles mainly concerned, and during the year, consignments of reconditioned felt hats were disinfected by formalin.

Examination of Imported Foods.—The Customs Department report to the Health Office all cases of foodstuffs in the wharf sheds or Government Bond suspected to be unsound.

8. *Buildings.*—Good control over new buildings is now possible, if staffs are adequate. A much better type of building is being erected. The Subdivision of Lands Board now enables better supervision to be made of housing sites. It will be seen from the figures that there is considerable housing activity, especially on the outskirts of Suva itself.

Total number of applications received	..	..	224
Total number of applications approved	..	..	223
Dwelling and tenement houses	..	..	151
Combined dwelling and store	..	..	8
Miscellaneous	..	..	64
Number of visits to new buildings	..	..	602

There was only one prosecution for building offences during the year.

Insanitary Buildings.—There were no Closing Orders issued during the year. There still remain insanitary buildings in the area, but the acute housing shortage has to be considered. Some sort of housing scheme seems inevitable before long, to remedy the present situation. Building costs are high, and high prices are charged for even the poorest accommodation.

9. *Government Quarters.*—Three new quarters for Government officials are in the course of erection, and eight are contemplated by the end of 1939.

10. *Septic Tanks.*—There were 13 septic tanks installed in the area during the year. The need for slight amendments to the standard type plan has been pointed out. These are necessary to prevent the tanks becoming prolific breeding grounds for culex mosquitoes near to houses.

11. *House-to-House Inspections.*—It cannot be stressed too strongly that regular and frequent house-to-house inspection is the most essential feature of a satisfactory sanitary service. I do not think the importance of this is sufficiently realised in Fiji. No advance in the control of fly breeding conditions and mosquito breeding conditions can be made without increasing these regular inspections, which can be done quite effectively by native inspectors. The following figures are given for the year:—

Routine inspections	..	..	..	..	3,830
Re-inspections	..	..	..	..	2,348
Sanitary defects recorded	..	..	..	..	2,922
Sanitary defects abated	..	..	..	..	2,850
Written notices issued	..	..	..	..	535
Prosecutions	..	..	..	..	5
Nuisances from mosquito larvæ abated	..	..	..	..	65

In addition to routine inspections, the following Institutions have received periodic visits in connection with their sanitation:—

His Majesty's Prison and Warders' lines.

The Mental Hospital

The Police lines and quarters.

Schools, including the Juvenile Industrial School and the hostel attached to the Central Medical School.

The Hospital and Leper quarters.

The Korovou Depot for the Infirm.

The Public Works Department labour quarters, Tamavua.

The urgent need for the maintenance of the areas immediately surrounding Suva in a satisfactory sanitary condition justify the appointment of three extra wholetime native inspectors.

There is one native inspector at present available for the Indian Settlement at Samabula, a most important and rapidly growing suburb of Suva. At present the other native inspectors (two) have to be frequently taken from their district inspection by reason of fumigation duties on ships and cutters, examination of water, meat, and milk supplies, and duties in connection with supervision of labour gangs, collection of leper patients, and office work.

12. *Clearing Gang and Anti-mosquito Measures.*—The following figures are given:—

Grass cutting and clearing by main gang	..	..	1,219 sq. chain
Drains dug, cleared and graded	..	..	5,109 yards
Mosquito breeding trees removed	..	..	29
Mosquito breeding places oiled	..	..	458
Loads of tins, bottles, rubbish, &c., removed	..	..	1,034

The amount of clearing to be done in Suva is sufficient to justify the employment of much larger gangs of labour.

The estimates for 1939 were increased by £750 to allow of extra anti-mosquito work in the environs of Suva, and to permit of some sanitary labour in outstations; both most important factors in improving sanitation.

13. *Milk Dairies and Ghee.*—The appointment of a Sanitary Overseer with special experience in dairies, &c., in August, has led to much improvement in this respect. The following figures are given:—

Visits to dairies and ghee producers	..	..	438
Unsatisfactory conditions recorded	..	..	423
Unsatisfactory conditions abated	..	..	201
Written notices issued	..	..	134
Milk samples (chemical)	..	..	215
Milk samples (bacteriological)	..	..	131
Milk samples (sediment)	..	..	40
Prosecutions for dairy conditions	..	..	4
Prosecutions for milk offences	..	..	26
Extra dairy licences issued	..	..	45

Pasteurised Milk.—The position with regard to pasteurised milk is not very satisfactory. An amendment to the Pure Food Regulations has been suggested, fixing the standard for pasteurised milk as:—

(i) less than 50,000 organisms per c.c.

(ii) number *Bacillus coli* is 1/100 of a c.c.

The following figures are compiled from the results of bacteriological analyses:—Total samples taken, 77. Standard Bacterial Count:—Highest count, over 1,000,000 organisms per c.c. Lowest count, 650 organisms per c.c.

There were 25 cases (32.5 per cent.) where *Bacillus coli* was present in 1/100 c.c. or less. Four samples had *B. coli* in 1/10,000 c.c. or less. Of the remaining, 23 samples had *B. coli* in 1/10 c.c. and 21 samples had *B. coli* in 1 c.c., while only eight samples showed no *B. coli* in 1 c.c.

Remarks.—The bacterial counts compare very favourably with figures in other countries. They are much lower than what one would expect, knowing the standards of dairies and milking conditions. Only seven samples out of 77 exceeded the suggested standard for pasteurised milk.

A disturbing element is the presence of *B. coli* in less than 100th of a c.c. About $\frac{1}{3}$ of the samples did not conform to the suggested standard. The almost universal presence of *B. coli* in Fiji waters may be responsible for this.

14. *Water Supply.*—The year has seen the commencement of the chlorination of the shipping main. The bacteriological examinations since its commencement have been very satisfactory. The shipping main incidentally shows the best bacteriological results, so that the necessity for chlorination of the other mains is logical and obvious. The results of the bacteriological analyses of the other water mains, especially the low level main, are, from the medical aspect, most unsatisfactory. After heavy rains the water is often distinctly discoloured and cloudy.

It is worthy of note that even during the outbreak of dysentery in Suva during November, and in spite of complaints from members of the public, and mineral water manufacturers, it was impossible to purchase a domestic water filter in Suva. Some hospitals in rural areas were without these simple means of water purification. This has since been remedied, and a few candle filters are now available. They should be available in all areas where piped water is not supplied.

I have inspected all the water intakes and am satisfied that the catchment areas are sufficiently remote, and free from grass contamination. Slight modifications in the pipe intakes, and better sedimentation would probably result in much improvement. The medical authorities should press for chlorination of the whole of the Suva water supply, if it is to be considered beyond reproach.

The following figures are given:—No. of samples taken, 242. The results of bacteriological analyses are given in a separate schedule, along with observations on the figures.

15. *Food Inspection*.—The definition of “food” in the Pure Food Ordinance has been extended, and should make for better working of the Act.

Bakehouses, restaurants, foodshops, mineral water factories, &c., are regularly inspected.

Vehicles used for carriage of meat, bread, vegetables, ice-cream, &c., come up for examination before being registered.

Dairies and milk are dealt with under a separate heading.

The following figures are given relating to food inspection:—

Visits to foodshops, &c	..	..	..	..	372
Written notices issued	..	..	..	..	16
Prosecutions	..	..	..	..	3
Unsatisfactory conditions recorded	..	..	..	..	105
Unsatisfactory conditions abated	..	..	..	..	103

The provision of legislation for the better control of places used for the manufacturing of ice-cream, mineral waters, ice, &c., is under consideration.

16. *Special Inspections*.—Laundries and barbers’ shops are regularly inspected and supervised so far as possible. Both are closely concerned with Public Health. Special regulations exist for their control.

17. *Meat*.—This is under the supervision of a fully qualified meat inspector, and daily visits are made to the slaughter-houses which supply meat to Suva.

The question of improvements to the slaughter-house at Tamavua was considered by the Central Board of Health, and a Committee of that Body considered whether the Government should favour slaughter-houses erected and run under Government control.

There is no doubt that many unsatisfactory conditions exist at the present slaughter-house, and at the fat extracting plant. These are to be remedied early in 1939.

I am supplied with the following figures:—

Visits to slaughter-house	..	..	..	..	618
Carcases inspected	..	..	..	..	3,644
Prosecutions for meat offences	..	..	..	..	2

A special course on meat inspection was given to senior students of the Central Medical School. It should be quite a simple matter to train native inspectors to recognise the chief diseased conditions found in carcasses, and to refer doubtful cases, when necessary, to the Medical Officer of the district. This is of importance in considering the establishment of slaughter-houses in rural districts. Such inspectors would have to be specially trained by Health Officers and Veterinary Officers.

The figures supplied show that tuberculosis is by far the commonest reason for condemnation of meat. Out of 92 carcasses condemned, 80 were condemned due to generalised tuberculosis.

A remarkable feature is the almost complete absence of *Cysticercus* (tapeworm larvæ) in both cattle and pigs. This may be due in no small measure to the soil sanitation work of previous years.

In country districts much could be done in improving pits for the disposal of offal, and in improvements in the way of dealing with washings from the slaughter slabs.

Hides are treated by salting and are exported in this condition.

18. *Meteorological*.—Figures are included as a separate schedule. Charts are now kept in the Health Office, relating to rainfall, relative humidity, maximum temperature, and the number of cases of the commoner diseases, to trace any relationships between these various factors and the incidence of disease.

The year has seen exceptional rainfall, especially towards the latter end of the year. There were 158·85 inches compared with 119·46 inches average over a period of 53 years. The monthly figures are as follows:—

			1937.	1938.	Average.
January	..	..	8·78	12·53	11·51
February	..	..	8·29	8·45	11·36
March	..	..	17·53	8·54	14·82
April	..	..	12·13	4·96	12·32
May	..	..	16·49	11·58	10·58
June	..	..	2·23	4·84	6·38
July	..	..	4·76	14·32	5·27
August	..	..	11·46	7·05	8·15
September	..	..	6·95	15·68	7·57
October	..	..	6·63	19·61	8·86
November	..	..	5·87	20·77	10·14
December	..	..	5·51	30·52	12·50
Totals	..	..	106·63	158·85	119·46

The differences in the monthly figures for different years demonstrate the absence of definite seasons in Suva. There will be a corresponding difficulty in establishing definite seasonal incidence of diseases—often a striking feature in other countries.

19. *Training of Sanitary Personnel*.—Classes have been given on sanitary law. Demonstrations are constantly being given on anti-mosquito measures. Talks have been given to final year Native Medical Practitioners on small-pox and vaccinations. They have also had practical experience in doing vaccinations. Several senior students of the Central Medical School have received training in meat inspection.

20. *Propaganda.*—This is constantly going on during routine visits of inspection and when disinfection of premises is done.

During the dysentery outbreak an article on simple means of prevention of both dysentery and typhoid was printed in the local press, and reproductions of it were given out.

Broadcast talks were given by Dr. Lambert, Mr. Pery-Johnston of the Pathological Laboratory, and Dr. Isaac, on dysentery.

Thanks are due to the local press for valuable assistance in this propaganda.

A talk on children's ailments was given by a Native Child Welfare Nurse to delegates of the Fiji Women's Guild who were attending a conference in Suva.

The lorries employed by the Town Board were used extensively for health propaganda, with striking and brief health slogans.

The new office entrance hall is used as a " museum " of hygiene in efforts to teach the public the dangers from flies, mosquitoes and rats.

Classes for junior teachers are projected, and the Fiji Annual Show might have a stand devoted to Hygiene and Child Welfare work.

21. *Remarks.*—From what has been written, it will be seen that a considerable amount of work is necessary in the task of improving sanitation in Fiji. Thanks largely to the rainfall, the defects are not translated into epidemics of disease, especially in Suva itself. Progress on the right lines is slowly being made, however.

I have to acknowledge with thanks the willing co-operation of all members of the staff.

TABLE I.—INFECTIOUS DISEASES—NOTIFICATIONS BY DISTRICTS, 1938.

Disease.	Suva Urban.	Suva Rural.	Rewa.	Colo East.	Ra.	Colo North.	Ba and Tavua.	Lautoka.	Nadi.	Nadroga & Colo West.	Navua and Namosi.	Macuata.	Bua.	Savu Savu.	Taveuni.	Lomaiviti.	Lau.	Kadavu.	Total.
INTESTINAL CONDITIONS.																			
Ankylostomiasis	85	87	87	7	22	3	13	39	9	2	3	35	..	456	278	24	..	18	1,168
Dysentery, amœbic	7	6	4	..	1	..	..	..	..	1	2	..	..	15	10	..	..	..	46
Dysentery, bacillary .. .	70	56	211	8	137	14	300	161	87	141	175	58	70	56	24	41	12	..	1,621
Enteric	3	5	6	1	5	6	20	50	13	84	1	11	..	4	..	4	..	..	213
Infantile diarrhœa .. ..	..	..	27	..	..	11	97	..	..	..	1	..	17	..	..	18	..	..	171
CHEST CONDITIONS.																			
Pneumonia, broncho .. .	3	..	26	2	9	4	41	21	50	26	2	35	12	6	12	1	50	7	307
„ lobar	2	1	8	1	7	..	57	16	21	6	2	12	..	7	20	6	13	1	180
Silicosis .. ..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1
Tuberculosis, pulmonary .	14	13	42	5	30	20	54	27	29	27	7	16	8	12	5	4	1	8	322
„ other forms	1	4	7	..	7	..	7	6	4	5	3	2	..	..	..	..	..	4	50
GENERAL.																			
Chicken-pox	12	2	11	8	..	1	4	..	3	4	5	2	..	2	..	..	..	3	57
Dengue .. ..	..	..	..	..	..	..	13	..	..	1	..	..	..	..	..	1	..	..	15
Diphtheria	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Measles	2	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	4
Whooping cough	76	19	108	..	2	7	28	20	115	83	24	..	54	1	..	6	..	..	543
Leprosy .. ..	..	4	1	..	5	..	1	7	4	2	2	7	..	..	3	1	2	..	39
Tetanus	2	1	1	..	..	..	..	..	1	1	..	..	..	2	..	..	..	..	8
Puerperal fever	2	5	2	..	1	..	..	..	4	2	..	..	..	..	..	..	..	..	16
Conjunctivitis .. ..	..	..	4	..	..	18	..	3	47	..	7	3	..	..	..	..	..	..	82
Trachoma	18	20	15	2	2	3	28	12	22	14	6	7	..	2	..	11	2	24	188
Venereal disease	40	24	30	..	23	2	42	33	28	8	..	73	3	4	29	7	1	..	347
Totals	339	248	590	34	251	89	706	395	437	407	240	261	165	567	381	124	81	65	5,380

TABLE II. INFECTIOUS DISEASES—NOTIFICATIONS BY RACES, 1938.

Disease.	European.	Fijian.	Indian.	Others.	Total.
INTESTINAL CONDITIONS.					
Ankylostomiasis	3	786	342	37	1,168
Dysentery, amœbic	1	28	15	2	46
Dysentery, bacillary .. .	79	896	570	76	1,621
Enteric	3	101	107	2	213
Infantile diarrhœa .. ..	..	114	50	7	171
CHEST CONDITIONS.					
Pneumonia, broncho .. .	..	182	122	3	307
Pneumonia, Lobar	2	94	78	6	180
Silicosis	1	..	..	..	1
Tuberculosis, pulmonary .	1	181	128	12	322
Tuberculosis, Other forms	1	38	9	2	50
GENERAL.					
Chicken-pox	2	41	3	11	57
Dengue	1	4	10	..	15
Diphtheria	1	1	..	..	2
Measles	2	1	..	1	4
Whooping cough	15	301	221	6	543
Leprosy .. ..	..	12	27	..	39
Tetanus .. ..	..	6	2	..	8
Puerperal fever .. ..	..	1	15	..	16
Conjunctivitis .. ..	..	42	40	..	82
Trachoma .. ..	..	125	56	7	188
Venereal disease	12	89	229	17	347
Totals	124	3,043	2,024	189	5,380

REPORT BY DR. E. V. MAXWELL, MEDICAL OFFICER IN CHARGE, COLONIAL WAR MEMORIAL HOSPITAL.

I have the honour to submit the following report on the Colonial War Memorial Hospital for the year ending 31st December, 1938.

HOSPITAL BUILDINGS.

The Hospital proper consists of two buildings—the main building, housing wards, offices and special departments, of two storeys in ferro-concrete, and fronting Waimanu Road; and a one-storeyed wooden building at the back of the main structure, formerly the Laboratory, and now available for use as an emergency isolation ward.

On the ground floor of the main building are two wards for male Native cases, medical and surgical; a female Native ward; the administrative offices and the special departments; while the upper floor comprises private wards; European male and female wards; middle wards; and a Native obstetric ward. There is a partial third storey in which are situated the Hospital kitchen, and the storerooms for each day's supplies, after these have been issued from the main store. An electric lift provides access for patients to the upper wards, on admission and on movement to and from the special departments. Service lifts connect the kitchen with the two floors for the serving of meals.

The out-buildings consist of a laundry, in concrete, and garages and sheds in wood. A new steam laundry is to be built in 1939, which will fill a long felt want, as great difficulty is at present experienced in wet weather in maintaining an adequate supply of clean, dry linen to the wards. The new laundry will also supply the Hospital with steam for sterilising purposes. The foundations were laid this year.

The male Native medical ward has been enlarged and altered, though adequate sanitary facilities are still lacking. It was re-occupied on September 13th, the cases having been temporarily housed, during the period of construction, in the emergency isolation building.

A children's ward is in process of construction on the first floor, over the male Native medical ward. The money for this ward was very kindly donated by Mr. E. G. Theodore and his associates, and it is now nearing completion. It was officially opened on July 19th by Lady Richards.

The limited accommodation for female Native cases has made itself felt this year owing to dysentery assuming epidemic proportions, and owing to the lack of special accommodation for children who, in consequence, have to be admitted to the female ward. This will, in part, be relieved by the completion of the new children's ward above mentioned, which, it is hoped, will be ready for occupation early in the new year. Another means of relief will be the erection of a separate obstetric ward, which has been proposed, as this would release the ward at present used for obstetric cases. This ward would then become available for female Native medical cases, and the present female Native ward for surgical cases, with easy access to the operating theatre. The female Native accommodation would then approximate to that for males.

The middle wards remain a problem also, as there is insufficient accommodation in them—14 beds only—for all the demands made on them.

The out-patients' departments are not big enough to deal properly with the numbers of patients attending them, but it is hoped that soon this state of affairs will no longer exist—with the building of the proposed Health Centre.

The X-Ray department is being added to, and a much needed new dark-room and accessory rooms are in course of construction.

General.—In August the main entrance hall was covered with a fixed layer of rubber matting, and at the same time loose strips of the same material were placed in the corridor and in some of the wards on the upper floor. This has been a great improvement, resulting in a definite lessening of noise in the Hospital. It is hoped that, at some future date, this floor covering will be extended to all parts of the building.

Repainting of parts of the interior of the Hospital, carried out this year, has led to noticeable improvement in its general appearance.

Beds and cots available number 183—beds, 139; cots, 36; and beds in the Lazarette, 8.

Quarters.—The handsome new quarters for the European nursing staff, commenced in 1937, were completed this year, and were finally occupied on October 10th. They had been officially opened on July 19th by Lady Richards.

The Native nurses moved into the quarters formerly occupied by the European nurses on December 21st.

New quarters—three houses—are being built for the Native medical staff and for post-graduate students, and should be completed early in 1939.

STAFF.

The staff of the Hospital is as follows:—

(i) *Medical Staff:* (a) *European.*—The Director of Medical Services, the Honourable Dr. V. W. T. McGusty, O.B.E., is Consulting Medical Officer. There is a Medical Officer in Charge, who is also Physician and Surgeon, and an Assistant Medical Officer who has charge of the out-patients' department, is Radiologist, Anæsthetist, and is Physician to the male Native medical ward.

(b) *Native.*—The Dispenser is a Fijian graduate of the Central Medical School, and he also acts as relieving anæsthetist. The Native out-patient department is under the charge of an Indian graduate of the School. Post-graduate Native Medical Practitioners assist this normal staff of two while they are attending their refresher course.



COLONIAL WAR MEMORIAL HOSPITAL, SUVA.



INTERIOR OF A WARD, COLONIAL WAR MEMORIAL HOSPITAL.



NEW NURSES' HOME, COLONIAL WAR MEMORIAL HOSPITAL.

Third and fourth year Medical Students act as ward dressers and male nurses in the wards, and also serve varying terms in the special departments and in the operating theatre. They are thus trained in practical procedure by clinical demonstrations and by actual practice of the routine ward work, dressings, minor surgery, assisting at operations, and administration of anæsthetics. The Medical Officer in Charge directs their course of clinical studies.

Two Fijian night dressers carry out the duties of male nurses in the male wards after 9 p.m. Though they have no special previous training—the old system of using Medical Students for this work interfered too much with the school curriculum—these dressers do very useful work and have proved themselves indispensable.

(ii) *The nursing staff* consists of the Matron, Miss L. M. Lea, an Assistant Matron, a House-keeper, nine Sisters, two Staff Nurses, and 13 probationer nurses. There are at present also two trained Native Obstetric Nurses, and 23 Native trainees.

(iii) *Administrative and other staff*.—This consists of the Steward and Clerk, assisted by a male Native clerk, who is also telephone operator. There is also a Hospital Technician. There are also male Natives employed, one as hall porter and one as lift attendant. Indian servants are employed as ward servants, garden boys, and in the kitchen and laundry.

STAFF CHANGES.

(a) *Medical*.—There have been numerous changes in the medical staff during the year.

(i) *The Medical Officer in Charge*, Dr. W. Worger, was transferred to Lautoka on November 28th, and Dr. E. V. Maxwell took over in his stead on December 1st, after transfer from Taveuni.

(ii) *Assistant Medical Officers*.—Dr. E. V. Maxwell was transferred to Taveuni on January 9th to relieve Dr. F. Widlake who assumed duty at the Hospital on January 21st. Dr. Widlake went on leave on May 20th and was relieved by Dr. Dovi, a new appointee, who was transferred to Savu Savu on October 8th. Dr. R. W. D. Maxwell was transferred to Suva from Levuka, prior to leave, and was at the Hospital from October 3rd to 13th. Dr. J. Taylor arrived in the Colony and assumed duty on September 15th, being transferred to Levuka on November 2nd. Dr. A. Hemsley took up duty at the Hospital on November 11th on his arrival in the Colony, and he is Assistant Medical Officer at present.

(iii) *Native Medical staff*.—The Dispenser, N.M.P. Vilikesa Ramaqa, was transferred to Kadavu on March 17th, returning on September 18th, and being relieved during this period by N.M.P. Ieni. I.M.P. M. Haniff, in charge of the Native out-patients' department, was granted sick leave on 3rd October for the rest of the year, and was relieved by N.M.P's. Josaia and Akuila for varying periods.

(b) *Nursing staff: Replacements and returns from leave*.—Sister Addis and Staff Nurse Garden, January 29th; Sister Rial, after leave from Lautoka Hospital, February 27th; Sister McKavanagh, October 19th; Sister McCormick, on appointment as X-Ray Sister November 4th; six probationer nurses.

(ii) *Transfers*.—Sister Cleary to Child Welfare work, January 20th; Staff Nurse Dawes to Lautoka for four weeks, January 31st; Sister Davis to Navua Emergency Isolation Hospital, February 21st to May 6th; Sister Carew to Levuka, June 1st; Sister Graham to Lautoka, July 1st; Sister Wilmot to Suva from Lautoka, July 20th.

(iii) *Resignations*.—Sister Hardy, X-Ray Sister, October 25th; Mrs. Wright, Housekeeper, retired on pension on December 31st, after many years of valuable service; four probationer nurses.

(iv) *Leave*.—Mrs. Wright, March 3rd to September 10th; Sister Walton, March 3rd to June 18th.

(v) *Sickness*.—Two of the European staff have required treatment during the year, but there has been no case of serious illness.

(vi) *Native nurses*.—Eight completed their training. Fifteen received medical attention.

(c) *Office staff*.—Mr. C. A. Brabant, Steward and Clerk to the Hospital, left on leave on August 18th, prior to retirement after 24 years of valuable service. Mr. A. S. Martin was appointed Acting Steward and Clerk in his place on August 10th. During the absence on leave of the Chief Clerk, Medical Department, Mr. A. S. Martin has acted for him, with Mr. S. E. Martin acting as Steward and Clerk at the Hospital.

WORK IN THE HOSPITAL.

Admissions.—There were 2,573 admissions during the year, which represents a decrease on the 1937 figures by 106; details are shown in the following table:—

			1937.	1938.
European	..	..	357	328
Fijian	..	..	845	734
Indian	..	..	1,113	1,152
Others	..	..	364	359
Total			2,679	2,573

The daily average of occupied beds was 105.18. Details of the cases admitted, according to disease classification, are given in Appendix I to this report. Deaths, 7.9 per cent., numbered 205.

Operations.—Major operations numbered 270, and 430 minor operations were performed, a total of 700 surgical procedures. Appendix II gives details of these. For the performance of these operations 515 anæsthetics were administered (details also given in Appendix II), being given by Dr. Paley, the Assistant Medical Officer, the Native Medical Practitioners on the staff, or by a student, under supervision, as part of his training.

Wards.—As mentioned above accommodation is short, but relief should come in part next year because of the new work in progress.

The obstetric ward though poorly, and not specially, equipped for the task, and having limited bed capacity, continues to do very good work indeed. Cases admitted and treated were:—

			1937.	1938.
Admissions			252	285
Births—				
Fijian			94	81
Indian			88	115
Others			37	44
			<hr/>	<hr/>
Total ..			219	240

The following abnormalities were dealt with:—Forceps deliveries, 3; Cæsarean sections, 4; twins, 1, being delivered by Cæsarean section; premature deliveries, 6; breech presentations, 3; transverse presentation, 1; persistent occipito-posterior, 5; eclampsia, 2; pre-eclamptic toxæmia, 5; ante-partum hæmorrhage, 5; post-partum hæmorrhage, 11; severe, 5, mild, 6. Still-births numbered 10. Although these last are not included in the main Hospital register, as they have never lived and therefore cannot be admitted, they have been shown in the detailed list in Appendix I, though not included in the total.

The ante- and post-natal clinics were not well attended this year. The reason seems to have been various staff changes in the ward, with no continuity of policy, and incomplete records concerning this year's work. These very valuable clinics must be kept up, and an attempt will be made to re-popularise them. With the existing staff arrangements, the Sister in charge of this ward being also in charge of the European male ward, the best work in obstetrics and in these clinics cannot be done.

Epidemics.—In February one of the Sisters of the staff of the Hospital had to be sent to Navua to set up and maintain an emergency hospital for dysentery cases, during the epidemic of this disease that occurred then.

Towards the end of the year dysentery became prevalent in and about Suva. This was almost entirely the bacillary type of infection, with a few cases of the amœbic disease. The Flexner type of organism predominated, with a few cases due to the Sonne and Schmitz types, but fortunately none of the Shiga type. The disease was prevalent chiefly among the Indian population, and the epidemic did not seem to be localised, cases being admitted from most of the surrounding rural districts as well as from Suva itself.

A number of cases of typhoid fever occurred as well, but the disease did not assume epidemic proportions.

Interesting Cases: (i) *Hæmophilia simulating Appendicitis.*—A young Indian male was admitted with a history very suggestive of appendicitis, and with clinical signs closely resembling those of this disease with abscess formation. It was fortunately remembered that this case had been in Hospital before and that hæmophilia had been diagnosed, or operation would have been undertaken with disastrous effect. This young man died not long afterwards from the effects of pressure from an extensive spontaneous hæmorrhage into the tissues of the neck, and it was found, at post-mortem examination, that the cause of his pain in the right side of the abdomen, and of the palpable tender swelling that was noted there clinically, was a large hæmorrhage in to the right Psoas muscle.

(ii) *Ruptured vaginal vault.*—A young Indian woman was admitted one evening to the obstetric ward, stated to have been in labour since the same afternoon. A very indefinite history was given. No gross abnormality was noted on preliminary examination, except that, though the patient was in pain and there was some hæmorrhage, no uterine contractions could be felt. The foetal position appeared to be normal. However, the patient's condition became progressively worse, and it was decided that Cæsarean section offered the only chance of her survival. To everyone's surprise, the baby, dead, was found at operation free in the abdomen. The intestines showed all the signs of an established peritonitis, and after a little search a tear was found in the vaginal vault low down in front, and hysterectomy was performed at this level. Though there seemed to be little chance of her survival, the patient was discharged well, after a stormy convalescence due to the peritonitis.

X-Ray department.—This department continues to do good work, and I attach a separate report on it by the Radiologist.

The portable X-Ray plant, which has long been needed, arrived towards the end of the year, and it now remains for the wards to be wired to supply electric current for its use. It is hoped that this work will be put in hand shortly.

The fixed plant is working satisfactorily, but the visit of an expert next year is looked forward to, to check over the installation, which has not been given expert attention since it was put in.

Radium.—Only ten milligrammes are available and this is useful for only the minor small superficial malignant growths and radio-sensitive lesions. A bigger supply would be of advantage.

Diathermy.—The surgical diathermy apparatus continues to be of great service for the coagulation of superficial new growths, and in certain major surgical procedures where the cutting current is made use of.

Out-patients' departments : (i) *Attendances* at these departments are shown in the following table:—

			1937.	1938.
Europeans	..	..	1,188	1,233
Fijians	..	..	7,065	8,833
Indians	..	..	8,054	18,043
Others	..	..	1,905	2,034
Total			18,212	30,143

(ii) *Prescriptions dispensed* for out-patients were:—

			1937.	1938.
Europeans	..	..	390	263
Fijians	..	..	2,109	2,431
Indians	..	..	4,138	9,654
Others	..	..	198	221
Total			6,835	12,569

Injections.—The following injections were given:—T.A.B., 1; N.A.B., 902; A.T.S., 171. The majority of the T.A.B. injections are now given in the Laboratory

It will be obvious, from the figures in the above tables, that the Native out-patient department is being visited to an enormously increased and quite unnecessary extent by the Indian population, since the remission of the fee that was charged until December 4th, 1937, for medicines and dressings supplied to non-Fijians.

PATHOLOGICAL LABORATORY.

This was under the direction of Dr. D. C. M. Macpherson, the Government Pathologist, for the greater part of the year, but on his going on leave, Dr. L. Isaac acted for him. Mr. J. E. Pery-Johnston is Technician.

The Laboratory gives indispensable assistance in the efficient diagnosis and treatment of many cases in the Hospital, and deals with a very great number of specimens from it, more especially during outbreaks of dysentery such as have occurred this year. Routine examination of stools for intestinal parasites is still carried out, and reference to this work will be found in the report of the Pathologist.

VISITORS.

On the 19th July, Lady Richards performed the opening ceremonies of the new Nurses' Home, and of the, as yet unfinished, children's ward.

On October 1st the Governor, His Excellency Sir Harry Luke, K.C.M.G., inspected the Hospital.

On Armistice Day His Excellency again visited the Hospital to lay a wreath on the memorial in the annual commemorative ceremony.

On December 25th "Father Christmas" paid his popular and amusing annual visit, in the person of Mr. Mune. This annual treat for the patients is very kindly provided, as are the gifts distributed to everyone in the Hospital, by the Presbyterian Church of Suva.

The Board of Visitors has paid its regular quarterly visits.

The Director of Medical Services has carried out a series of monthly visits of inspection. These visits are much appreciated as a means of keeping him in touch with the work of the Hospital and with its needs.

REPORT BY DR. A. G. HEMSLEY, ON X-RAY DEPARTMENT, COLONIAL WAR MEMORIAL HOSPITAL.

I have the honour to submit the following report on the X-Ray Department, Colonial War Memorial Hospital, for the year ending 31st December, 1938.

2. During the year under review the Department was in the hands of:—

- (a) Dr. E. V. Maxwell for the first month.
- (b) Dr. F. Widlake for the next four months.
- (c) Dr. Dovi for the next five months.
- (d) Dr. Worger and Dr. Taylor together for one month.
- (e) Dr. Hemsley for the last month.

3. The X-Ray plant has functioned satisfactorily throughout the whole period. A portable X-Ray plant was obtained towards the end of the year, but the wiring of the wards for the machine is not yet begun.

4. During 1938, 1,097 patients were examined and 1,355 films exposed. Details are shown in the following table of the types of examination:—

Bones, joints and teeth	..	..	..	715
Chests	..	..	..	210
Barium meals and enemata	..	..	..	88
Abdominal viscera	..	..	..	72
Pyelograms	..	..	..	12
Cholecystograms	..	..	..	16

The figures show an increase on those of 1937 by 287 patients examined and 160 films exposed.

5. Sister Hardy acted as Radiographer for the first ten months of the year and Sister McCormick for the last two months. Their services have been invaluable.

REPORT BY DR. D. C. M. MACPHERSON, GOVERNMENT PATHOLOGIST, ON THE WORK OF THE PATHOLOGICAL AND RESEARCH DIVISION.

The total number of examinations carried out during the year was 5,783, being an increase of 52 over the total for the previous year. It will be noted that examinations of fæces for organisms of the dysentery-typhoid group continue to be numerous, and as each in itself involves a great deal of routine work before the identification is completed, it will be appreciated that the numbers by no means represent the actual volume of the work done.

Staff.—Dr. D. C. M. Macpherson, Government Pathologist, continued also to act as Medical Officer of Health for Suva until the arrival of Dr. Baxter in the Colony in March. On 30th June, Dr. Macpherson proceeded on leave, visiting a number of scientific institutions in the United States, Great Britain, Germany, France and Holland. He also was attached for three months to the Pathological Division of the British Post-Graduate Medical School in London. During his absence, Dr. Lindsay Isaac was appointed to act as Government Pathologist. Mr. J. E. Pery-Johnston is Technician, and Native Medical Practitioner Maciu Salato is Senior Native Assistant. No changes took place in the Junior Laboratory staff during the year.

Additional Equipment.—Leitz apparatus for micro-photography, a further Leitz binocular microscope with quadruple nosepiece, Hanovia ultra-violet lamp, and electrically heated inspissator were among the major items of apparatus added to the equipment during the year. A considerable number of text-books, monographs, reprints, and periodicals were added to the library both by gift and purchase.

Teaching.—A number of post-graduate students were attached for varying periods to the Laboratories during the year, and received practical instruction in Clinical Pathology, Bacteriology and Parasitology. A course of lectures and demonstrations in these subjects was also given to students at the Central Medical School and to European Probationer Nurses at the Colonial War Memorial Hospital. A course on Forensic Medicine and Toxicology was given to medical students in their third year of study.

Medico-Legal.—The Pathologist is Police Surgeon for the Suva district, and the Laboratory has also continued to deal with a considerable number of exhibits sent for examination and report from districts throughout the Colony.

Animals.—Despite the excellence of their housing and greatest care in feeding, these have not done well. It is hoped to import fresh stock in the near future.

Research.—Dr. Isaac has devoted a considerable amount of time to the question of nutrition, and it is hoped that greater progress may be possible in this direction during the ensuing year. It has become increasingly evident that the energies of the present staff are wholly absorbed by routine work, and accordingly many interesting problems must remain uninvestigated until such time as additional help may be available.

Visitors.—Many distinguished medical men and others have visited the laboratory during the year. Such contacts are most stimulating and frequently helpful to the staff.

SUMMARY OF EXAMINATIONS PERFORMED DURING 1938.

Total number of examinations of fæces for dysentery (A & B)	..	960
Positive Shiga	.. .. .	40
„ Flexner	.. .. .	118
„ Schmitz	.. .. .	11
„ Sonne	.. .. .	15
„ Entamoeba histolytica	.. .. .	20
„ Balantidium coli	.. .. .	15
„ Giardia lamblia	.. .. .	10
Total number of examinations for typhoid and food-poisoning	..	115
Positive B. Typhosus	.. .. .	8
Total number of—		
Kahn tests performed	.. .. .	232
Throat swabs examined for C. diphtheriae	.. .. .	510
Sputa examined for M. tuberculosis	.. .. .	330
Agglutination tests performed	.. .. .	81
Blood counts performed	.. .. .	283
Blood cultures	.. .. .	29
Biochemical examinations	.. .. .	155
Occult blood examinations	.. .. .	3
Milk examinations	.. .. .	130
Water examinations	.. .. .	353
Pus examinations	.. .. .	43
Puncture fluid examinations	.. .. .	39
Urine examinations	.. .. .	199
Venereal disease examinations (other than Kahn)	.. .. .	223
Autogenous vaccines prepared	.. .. .	21
Pathological specimens examined	.. .. .	56
Total blood group examinations	.. .. .	19
Total number of stools examined for worms and ova	.. .. .	1,125
Positive for hookworm	.. .. .	272 = 24.2 per cent. of total.
„ trichuris	.. .. .	30 = 2.7 „ „
„ ascaris	.. .. .	58 = 5.2 „ „
„ oxyuris	.. .. .	57 = 5.1 „ „
„ trichostrongylus	.. .. .	4 = 0.3 „ „
Total number of rats examined for B. Pestis	.. .. .	406

Miscellaneous examinations not included above but inclusive of	
autopsies and medico-legal examinations	441
Total of all examinations performed in the Laboratory for 1938 ..	5,783
Total of all examinations performed in the Laboratory for 1937 ..	5,731
Increase during 1938	52

In addition to the above, 473 bottles of anti-typhoid vaccine, valued at £709 10s. 0d., and 21 bottles of staphylococcal vaccine, valued at £31 10s. 0d., were prepared during the year. Twenty-one clinical photographs were taken, developed and printed.

REPORT BY DR. D. W. HOODLESS ON THE CENTRAL MEDICAL SCHOOL, SUVA.

1. *Students*.—During the year 1938 there were 38 students in residence at the two dormitories. The following table shows the race of the different students in each year:—

	1st year.	2nd year.	3rd year.	4th year.	Post- graduates.	Total.
Western Samoa	2	2	2	.	6
Eastern Samoa	1	1	.	2
Tonga	1	1	1	.	3
Cook Islands	1	2	.	3
Gilbert and Ellice Islands ..	.	2	1	1	1	5
Solomon Islands	1	1	1	.	3
New Hebrides
Nauru	1	.	1	.	2
Fiji—Fijians	6	3	4	2	15
Rotumans	1	.	.	.	1
Indians	1	1	2
	—	—	—	—	—	—
	.	14	10	14	4	42

The four post-graduates in the above list were qualified Native Medical Practitioners, and only one of them, from the Gilbert Islands, resided in the students' dormitory. During 1938 the Solomon Islands student in the third year class was dismissed in October for disciplinary reasons, and two senior Fijians in the fourth year class were unable to complete their final qualifying examinations owing to serious illness. Lectures will recommence on Monday, January 16th, 1939, and there will be 17 students in the new first year class.

2. *Health*.—One Fijian student suffering from repeated hæmoptyses had to discontinue his studies in October, and after three months in hospital was able to return to Kadavu for further convalescence. At the same time another fourth year Fijian student also broke down in health suffering from mental trouble after head injuries at rugby. Both these students had qualified in two of their final subjects prior to their illness. In each case extended leave was granted, and it is hoped that one or both of them will be able to return to the Medical School at a later date in order to complete their qualifying examinations. In May, 1938, one of the fourth year Samoan students was seriously ill with bacillary dysentery but he eventually recovered and after two months convalescence in Levuka was able to resume his studies and later on he successfully qualified in December.

In addition to these three serious cases of illness there were eight minor cases of dysentery and the usual number of cases of gastric influenza and the "common cold."

Except for the above three serious cases the general health of the students has been good during 1938, and in spite of numerous cases of chicken-pox, measles, and whooping-cough in Suva there were no cases of these diseases among the students.

During the year the incidence of skin diseases has been much less than usual. As in former years all the medical students, if not already protected, were vaccinated against small-pox, and inoculated against typhoid fever. Naso-pharyngeal swabs taken from the third and fourth year students showed a complete absence of hæmolytic streptococcal infection; and tests for diphtheria showed only one case of non-immunity, but this latter test may require further confirmation.

The Medical School has now completed its first ten years, and it can be definitely stated that the health record throughout that period has been very satisfactory. No deaths have occurred among the students, and the incidence of serious cases of disease has been low. The good health of the students may be attributed to:—(a) adequate facilities for sports and games, (b) a good dietary, and (c) early adequate medical treatment of all minor and major illnesses. A few cases of pulmonary tuberculosis have occurred, but in all these cases there is no doubt that the disease was acquired prior to the entry of the student to the Medical School, and in each case the student has been sent back to his island group as soon as possible after the disease was diagnosed and treated. It is seen therefore that no Administration need have any doubts regarding the health of their own students while they are being medically trained in Suva. There remains of course the risk of the occurrence of a pandemic disease such as the type of influenza which occurred in 1918–19, but it is probable that the students would even in such circumstances continue to give a good record.

3. *Discipline*.—The discipline of the students has continued to be excellent throughout 1938 except in the one case of a Solomon Islands student in the third year class who after several failures in class examinations became sullen and had to be dismissed from the school. The ages of the students ranged from 17 years to 24 years and this age-range covered the most difficult period in the life of these native youths. The students included 17 Polynesians, 18 Melanesians, 5 Micronesians and 2 Indians; eleven different languages were spoken, and seven religions were represented. The temperaments of the students included a majority of the easy-going sanguine type which has been generally regarded as typical of the South Seas Islanders, but there were a few cases of the phlegmatic and choleric types, the former being found among the Solomon students (Melanesians) and the latter among the Gilbertese (Micronesians).

As stated in previous reports the ever-increasing Europeanisation of the native races in the South Pacific has gradually crept into the social life of the native medical students. The Cook Islands students are almost completely Europeanised and wear trousers, shoes, &c, having received a preliminary education at Te Aute College in New Zealand. It has been interesting to watch the efforts made by some of the other students to copy one or more of the European habits of the three Cook Islanders, and I have vivid recollections of one week when there was a craze for making a parting in the hair among the Fijian students. Most students are fully aware that the best policy of all is to keep to their own native customs and dress where these are not in conflict with their work and duties as medical students, but none of them can resist the temptation to dress up in semi-European fashion for religious services on Sundays. At my suggestion two of the participating Administrations (Western Samoa and Nauru) have requested their students, before leaving their island homes to proceed to Fiji for medical training, to sign an undertaking that they will obey the rules and regulations of the Central Medical School, and that they will adhere to their own native customs and dress during their medical training.

The regular routine of theoretical and practical work acts probably as the chief factor in maintaining good order and discipline, and at the same time the keen enthusiasm of the students themselves in their work, and a constant endeavour to maintain the good reputation of the School, are equally important.

4. *Boarding arrangements.*—All the students are boarders, and there are two Indian cooks who prepare and serve the meals. The present kitchen is much too small for the amount of cooking which is necessary. When the new cement dormitory is built it is anticipated adequate facilities will be provided for the cooking and serving of meals. During 1938 the old arrangement was continued whereby each student was allowed to send ten articles weekly to the school laundry which is in charge of one Indian laundryman, but as soon as the new electric laundry is completed the arrangements will be much improved.

Several important changes will be made in the boarding arrangements, or what one may call the domestic side of the Medical School, when the proposed cement dormitory is erected. At present there are twelve Fijians students in residence at the "old" quarters about a quarter of a mile from the School and the remaining number of students live at the so-called "new" quarters which are close to the school. Both these dormitories are wooden and it is proposed to replace them by one large cement dormitory in which instead of single bedrooms the rooms will accommodate groups of four students. Improved arrangements for cooking, dining-room, store-rooms, and bathing facilities are all included in the new dormitory which will be erected in 1940.

During 1938 the average total cost per student was £75 approximately, which included £27 for food and about £2 for laundry expenses.

5. *Courses of Studies.*—In 1931 the course of studies was extended from three years to four years. This four years' course is divided into a junior period of $1\frac{1}{2}$ years followed by a senior period of $2\frac{1}{2}$ years. The junior students receive instruction in Physics, Chemistry, Biology, Anatomy and Physiology, and attend the Medical School every morning and afternoon. The senior students are on duty in the hospital from 8 a.m. to 1 p.m. each day, and attend lectures in the afternoons or evenings by the members of the honorary staff which include twelve lecturers, eight of whom are Medical Practitioners. The senior students act as dressers and clinical assistants in the hospital, and form an integral part of the staff of the hospital under the direction of the Medical Officers in charge. The duties of the senior students in the hospital include work in the medical wards, surgical wards, women's wards, European wards, the hospital dispensary and out-patients. Strictly speaking the junior students are not required to do any hospital duty, but in actual practice one or more of them may volunteer in the afternoons for relieving duty in the hospital while the senior students are at lectures; and again during the Christmas and mid-year holidays all the junior students put in four weeks of relieving duty in the hospital so that the senior students may take their own holidays.

During 1937 and 1938 the native medical students have no longer been required to do "night duty" in the hospital, and this has caused a marked improvement in the attendance at lectures, and also at meals. The only remaining factor which now prevents a regular attendance at lectures is what is known as "special-duty." This duty is necessitated by patients who from one cause or another require some one to be in continuous attendance, and this duty has fallen on the medical students; and results in a partial return to the bugbear of "night-duty." A better arrangement would be for no student to have any duty at all in the hospital outside the hours of 8 a.m. to 8 p.m. except for emergency cases.

Prior to 1929 under the old Fiji Medical School there were only about 14 Fijian students in residence, and only six lectures were given each week, and these lectures were given mostly in the Fijian language by three European lecturers. After the Central Medical School was opened in 1929 the number of students was increased to 40 or more, and full courses of lectures have been given in all subjects. The staff now includes one full-time officer and a large honorary staff which varies from 12 to 15 in number. A printed syllabus of studies was prepared in 1929, but it was soon found that a final/syllabus in any one subject could not be rigidly followed. In practice it has been found to be much more satisfactory to allow each lecturer complete freedom in his own subject, and the position is safeguarded by appointing a co-examiner who is entitled to set and mark half the total number of questions in each final qualifying examination.

The following text-books are in general use by the students:—Wheeler and Jack's *Handbook of Medicine*; E. C. Mekie's *Handbook of Surgery*; R. L. Spittel's *Essentials of Surgery*; Hale White's *Materia Medica*; Henry Jollett's *A Short Practice of Midwifery for Nurses*; C. C. Chesterman's *Tropical Dispensary Handbook*; C. F. M. Saint's *Surgical Note-taking*; and *Anatomy and Hygiene* by A. M. Ashdown and E. Bleazby. In addition, several copies of the larger text-books in each subject are available for occasional use by the students; and several students have bought their own copies of Buchanan's *Anatomy*, Rose and Carless' *Surgery*, and Beaumont's *Medicine*. The

Central Medical School library contains more than 1,000 medical books, but most of these are too advanced for general use, and the students are not encouraged to study from these advanced text-books but rather to learn their own lecture notes and the more elementary text-books which are supplied to them.

6. *Examinations during 1938.*—As stated in the first paragraph of this report there were only three years of students during 1938, namely fourth year, third year and second year students. The second year students started their clinical studies in July, 1938, and this enabled the fourth year students to take revision courses of studies from July to November, 1938, in Medicine and Surgery preparatory to the final examinations.

Fourth-year students.—There were 14 students in this class and twelve completed their four years' training and successfully qualified as Native Medical Practitioners in December, 1938. The standard, both at written and oral examinations, was good, and indicated a gradual and progressive improvement in the examinational standard from 1929 onwards. There were two Fijian students in this fourth year who were unable to complete their final examinations on account of ill-health.

Third-year students.—Regular class examinations were held in each quarter during 1938 for the ten students in this year. In June, 1938, all the ten students passed in Anæsthetics and by September, 1938, nine of them had passed in Bacteriology. Later on at the December quarterly examinations four failed in Medicine, but none in Surgery. Owing to the dismissal in October of the Solomon Islands student of this class there were only nine third-year students remaining at the end of the year.

Second-year students.—All the 14 students in this year were successful at the quarterly class-examinations held in March, 1938, and all of them again were successful at the second professional examinations held in June, 1938. This year of students changed over in July from the Medical School to commence regular clinical work in the Hospital, and at the quarterly examinations held in September, 1938, all the 14 students passed in Medicine, Surgery and Materia Medica. At the December class-examinations all passed again in Medicine but four failed in Surgery. It is customary to take 60 per cent. as a pass mark in each written examination.

First-year students.—There was no entry-class in January, 1938, and there are therefore no examination results to report.

Quarterly reports on printed forms for all classes, showing the conduct, progress in studies and examination results, have been regularly sent out during 1938 to each of the participating Administrations.

7. *Class Prizes and Medals.*—During 1938 the following gold medals were awarded:—

- (a) the B.M.A. medal in Surgery was awarded to Terenuku Williams (Cook Islands).
- (b) the Honourable Mr. Alport Barker's medal in Medicine was awarded to Peti Tofaeono (Western Samoa);
- (c) the N.M.P. Ielu medal in Diseases of Children was awarded to Livai Volavola (Fiji);
- (d) Dr. A. H. B. Pearce's medal in Obstetrics was awarded to Joseph Harris (Nauru);
- (e) Sir Henry Scott's medal in Anatomy was awarded to Mara Uluilakeba (Fiji); and
- (f) the award of Sir Maynard Hedstrom's medal for 1938 in Public Health was held over for a further period of six months owing to the ill-health of a Fijian student.

The class prizes awarded for 1938 were as follows:—

Fourth Year.

Medicine	..	..	..	Peti Tofaeono (W. Samoa).
Surgery	..	..	..	Terenuku Williams (Cook Is.).
Public Health	..	..	..	Uraia Naqasima (Fiji).
Diseases of Children	..	..	..	Josateki Nawalo (Fiji).
Obstetrics	..	..	..	Joseph Harris (Nauru).

Third Year.

Medicine	..	..	..	Aisake Niu (Fiji).
Surgery	..	..	..	Mitieli Molidua (Fiji).
Anæsthetics	..	..	..	James Rennie (Cook Is.).
Bacteriology	..	..	..	James Rennie (Cook Is.).

Second Year.

Medicine	..	..	..	Siaosi Tuioti (W. Samoa).
Surgery	..	..	..	A. K. Manulevu (Fiji).
Materia Medica	..	..	..	Siaosi Tuioti (W. Samoa).
Anatomy	..	..	..	Uliami F. Tufui (Tonga)
Physiology	..	..	..	Siaosi Tuioti (W. Samoa).

First Year.

(No class prizes awarded).

A special prize awarded by the Pacific Island Club in Sydney was awarded to senior student Meauke Kuresa (Gilbert Islands) who qualified as a Native Medical Practitioner in December, 1938. Two special prizes donated by Dr. J. C. Geiger, Director of Public Health in San Francisco, were awarded to students Eveni Levi of Eastern Samoa and James Rennie of the Cook Islands.

An analysis of the lists of class prize winners for the last eight years gives the following percentages:—Fiji, 41 prizes or 33·9 per cent.; Western Samoa, 27 prizes of 22·3 per cent.; Tonga, 22 prizes or 18·2 per cent.; Cook Islands, 18 prizes or 14·9 per cent.; all others 23 prizes or 10·7 per cent. It must be noted however that out of the average number of 40 students about 17 have been Fijians, 5 were Samoans, 4 were Tongans, 3 were Cook Islanders, and 10 were included in the words "all others."

8. *Lecturers.*—The following list gives the names of the lecturers and the subject taken during 1938:—

Obstetrics	..	..	..	..	Dr. V. W. T. McGusty.
Surgery	..	..	..	..	Dr. W. Worger and Dr. W. L. Isaac.
Medicine	..	..	..	..	Dr. F. Widlake and Dr. J. Dovi.
Public Health and Hygiene	..	..	..	..	Dr. S. M. Lambert.
Diseases of Children	..	..	..	..	Dr. W. M. Ramsay.
Bacteriology	..	..	..	..	Mr. J. E. Pery-Johnston.
Anæsthetics	..	..	..	..	Dr. I. H. Beattie.
Dentistry	..	..	..	..	Dr. L. B. Hart.
Forensic Medicine	..	..	..	..	Dr. D. C. M. Macpherson.
Materia Medica.	..	..	..	..	N.M.P. Filikesa.
Anatomy and Physiology	..	..	..	..	Dr. D. W. Hoodless.
Chemistry	..	..	..	..	Mr. W. J. Blackie.
Biology and Physics	..	..	..	..	Dr. D. W. Hoodless.
Book-keeping	..	..	..	..	Mr. C. A. Brabant.

In addition, numerous demonstrations in practical and clinical work were given by the members of the European nursing staff and the qualified Native Medical Practitioners on the staff at the Hospital, and by Mr. J. E. Pery-Johnston at the Bacteriological Laboratory.

9. *Games.*—The Central Medical School rugby team played regularly from April to September, 1938, and were placed last out of six teams in the native section of the Fiji Rugby Union. The Central Medical School cricket team played games from October, 1937, to March, 1938, and again from October, 1938, onwards. This cricket team won the Sir Walter Carpenter challenge shield in cricket for 1937–38, and the shield was duly presented to the school captain Aisake Niu by Sir Walter Carpenter personally on January 12th, 1939.

Ample facilities for sports and games are provided for all the medical students. Mr. H. H. Vaskess allows the students to use his private tennis-court, and this favour is greatly appreciated. The new St. Luke's playground has been enlarged, levelled and drained, and will be available for football and cricket matches in 1939. Boxing and table-tennis have also been regularly practised by the students. The Central Medical School sports fund is maintained by an annual contribution from each Administration of 30s. per student, and the students themselves contribute 6s. each per annum. By means of this fund the students are provided with all the necessary materials for football, cricket, &c., including clothing such as football jerseys, shorts, &c.

As already mentioned in paragraph 2 of this report the provision of adequate facilities for sports and games is regarded as one of the three main factors in maintaining the students in good health; and it is satisfactory to note that out of a total of 40 students each and every one of them finds one or more games at which he can become an adept. The South Sea Island youth has adopted all the customary European games, and the difficulty now is not to encourage the students in the practice of these games but rather to control their indulgence in these games so that hospital duties and their medical studies are not neglected. The frequent injuries and fractures received on the rugby field have raised the old problem of whether it would not be better to change over to association football instead of rugby, but perhaps it is advisable to postpone this thorny problem to a later time.

10. *Terms and Vacations.*—The school year is divided into four quarters, commencing on January 15th and ending on December 15th. The students are given two week's holiday at Christmas and again at the end of June. Half the number of students are away for two weeks, and then the other half have two weeks' holiday. There are therefore two periods of four weeks each when no lectures are given. It is obvious that only a few students can enjoy these "holidays" by going home to their own villages, but a number of the Samoan and Tongan students have friends in other parts of Fiji and are able to visit these friends during the holiday period.

In December, 1938, there were nine students from distant Administrations and arrangements had to be made for their return to their island homes. Two travelled *via* Auckland and Sydney back to Nauru or the Solomons; two more travelled *via* Auckland *en route* to Raratonga; three travelled northwards to Eastern or Western Samoa; one had to make a circuitous voyage by a cargo boat to get back to Tonga; and the ninth newly-qualified N.M.P. is still in Suva waiting for the mission boat "John Williams" to take him back to the Gilbert Islands.

The Medical School will re-open on January 16th, 1939, with 43 students and post-graduates and of these 41 will be resident in the two dormitories.

11. *Board Meetings.*—One meeting of the Central Medical School Advisory Board was held during 1938 with the Director of Medical Services, Dr. V. W. T. McGusty, as Chairman. The other members of the Advisory Board were Dr. S. M. Lambert of the Rockefeller Foundation, Dr. W. Worger, Medical Officer in charge of the Colonial War Memorial Hospital, and Mr. H. H. Vaskess, Secretary to the Western Pacific High Commission. Dr. D. W. Hoodless continued to act as secretary to the Board during 1938. The Board continued to carry out its routine business of recommending the award of certificates to newly-qualified Native Medical Practitioners, deciding the number of new students to be admitted from each participating Administration, selecting the new Fijian students for the following year, and making suitable recommendations on lectures, courses of studies, regulations, disciplinary measures, and improvements to buildings. Lists of all examination results during 1938 have been circulated regularly to the members of the Advisory Board. The new rules and regulations for the Medical School have not yet been published, and no "Mission" students (*vide* page 4 of the 1937 report) have been admitted up to the present, although one from the New Hebrides is now in Fiji receiving further preliminary education preparatory to entering the Medical School in January, 1940.

12. *Visitors*.—The number of visitors to the Central Medical School during 1938 was 63, as compared with 73 in 1937, 75 in 1936, and 125 during 1935. Among the distinguished visitors during 1938 were His Excellency Sir Harry Luke, Lord Stamp, Professor Lambert Rogers, Dr. J. C. Geiger of San Francisco, and Dr. M. H. Watt of Wellington. The Resident Commissioner of the British Solomon Islands and the British Resident Commissioner in the New Hebrides both visited the Medical School during May, 1938, and were able personally to see the students at work and study.

The Central Medical School in Fiji continues to attract a number of visitors, mostly medical men, who are travelling across the Pacific. Sir James Barrett's article on the Central Medical School published in *Nature* September 11th, 1937, and the summary of the 1937 annual report published in the *British Medical Journal* of September 3rd, 1938, have both given a wide publicity to the medical school. It must be emphasised, however, that, as already stated in the 1937 report, the daily routine work of the qualified Native Medical Practitioners in the country districts in Fiji, Samoa, Tonga, &c., is of vastly more importance than the more spectacular medical training of the students in Suva. The true test of the success of the medical training of the students lies not in the number of congratulatory praises given by visiting members of the medical profession but in the success or failure of these students in their future careers in the next ten, twenty or thirty years.

13. *Finance*.—The annual cost per student for the years 1930 to 1937 has been:—1930, £76 13s. 5d.; 1931, £75 17s. 5d.; 1932, £75 4s. 10d.; 1933, £76 19s. 2d.; 1934, £73 4s. 3d.; 1935, £72 2s. 6d.; 1936, £70 17s. 6d.; and 1937, £66 8s. 7d. The exact figure for 1938 is not yet available, although it has been estimated at £75 approximately. This annual expenditure covers board, and lodgings, tuition fees, maintenance expenses, clothing, servants' wages, and a small pocket-money allowance of 10s. per month per student. It will be seen therefore that each student costs about £75 per annum, so that the four years' course of studies cost about £300 per head, to which must be added any extra expenditure for transport to and from Fiji. The original capital expenditure for buildings and equipment was about £170 per student and a proportion of this capital expenditure must be added if the total cost of training a Native Medical Practitioner is to be estimated. This proportion is different for each participating Administration and varies in accordance with the maximum number of trained men required; and may be approximately stated as Tonga, £42; Gilbert and Ellice Islands, £35; and Western Samoa, £20.

The method of sending out the accounts for the cost of training the students from each Administration was briefly outlined in the 1937 annual report, and need not be repeated here. The only difficulty that has arisen has been the question of charging half-fees for an unfilled student-ship.

It may be added that the assisting monetary contributions paid by the Rockefeller Foundation of New York ceased in 1932 and since that time no grants-in-aid have been received from Imperial or other sources.

During the period 1926–1928, prior to the opening of the present Central Medical School, there was lengthy consideration of various schemes for the inauguration of a new medical school. Finally the alternative schemes were (a) a four-group school for 28 students at an average annual estimate of £91 per student, and (b) the Rockefeller Foundation seven-group school for 40 students at an average annual cost of £90 per student. The latter scheme was ultimately adopted, and it is interesting to note that the actual annual expenditure has never exceeded £77 per student.

14. *The Medical School and the N.M.P. Service in Fiji*.—The first N.M.P. certificate was signed on 12th November, 1888, and since that time 209 certificates have been issued to qualified Native Medical Practitioners. Of these 51 were for other than Fijians, so that 158 remain for graduates from Fiji. Of these 158 qualified men only 70 (63 Fijians and 7 Indians) are now in actual practice in the Fiji Government service. The average number of Fijian students who qualify each year is four, together with four more from other Administrations. In Fiji there has been an average annual loss of two, caused by death, retirement, &c.

In Fiji there is one N.M.P. for every 1,600 of the Fijian population, and if the seven Indian Medical Practitioners and the 90,000 Indian population are included, there is one qualified man for 2,800 of population. These figures take no account of the European medical officers and the other portions of the population in Fiji.

It is estimated that to build up a corps of 100 qualified Fijian practitioners the present system of medical training must be continued until 1950, but this date must be greatly extended if any very serious epidemic occurs. During the influenza epidemic of 1918–19 no less than eight qualified men (out of a total of 48) died within ten weeks.

15. *Conclusion*.—The Central Medical School has now completed its first ten years of service, and during that period it has trained 79 Native Medical Practitioners, so that an average of eight have been sent out each year. The good name and reputation of the former Fiji Medical School have been taken over by the Central Medical School, and an endeavour has been made to enhance this reputation during the last ten years, and it is hoped that it will be equally maintained during the next decade.

In conclusion, no annual report on the Central Medical School would be complete without due acknowledgment of the assistance given to the School by the members of the honorary staff and of the general direction and control exercised by the Director of Medical Services, Dr. V. W. T. McGusty. This acknowledgment is made on behalf of all the students, seniors and juniors, for the cordial and happy relationship which has existed during 1938 between all members of the staff and all the students.

REPORT BY DR. C. J. AUSTIN, MEDICAL SUPERINTENDENT, MAKOGAI.

Sir,

May 29th, 1939.

I have the honour to submit the report of the Central Leper Hospital, Makogai, for the year 1938.

Dr. W. G. Macnaughton acted as Medical Superintendent until my return from leave on the 17th August, 1938. While on leave I had the privilege of attending the International Congress of Leprosy at Cairo, as well as of visiting centres of leprosy work in India, Malaya and the Dutch East Indies.

Staff.—The Makogai Nursing staff consists of fifteen European and twelve Native sisters of the Society of Mary. In addition to the actual nursing of patients, the sisters assist at operations, injections and bacteriological work, run the talkie cinema machine and the patients' co-operative store, and issue rations, as well as helping with photography and typewriting. More valuable than all these accomplishments, however, is the moral effect upon the patients of the sisters' cheerful and selfless devotion to their welfare. It is surely to the results of this enthusiastic and loyal labour that we must attribute the recently written comment of a distinguished and travelled medical visitor that "Makogai is the best Leper Settlement in the World."

Sister Mary Germaine and Sister Mary Flavia went on leave to New Zealand on October 10th and returned on 5th December.

Statistics.—Reference to the statistical table in the Appendix shows the total number of patients at Makogai to have increased during the year from five hundred and seventy-seven to six hundred and nineteen. Of the one hundred and thirty-five admissions, eighty-one were from outside the Colony, mainly from the Cook and Gilbert Island groups; fifty-three patients were conditionally discharged as having been free from active signs of the disease for two years; four Indians were repatriated at their own request, relatives in India having agreed to be responsible for their welfare; and thirty-six deaths occurred, giving a mortality rate of 63·7 per 1000. The average daily number of patients for the year was five hundred and sixty-five.

Classification.—The modified classification adopted by the Cairo Congress follows in its broad essentials that proposed by the Manila Conference in 1931. There are two main types—Lepromatous and Neural. The substitution of the term "Lepromatous" for the earlier "Cutaneous" is a distinct advance. It has a pathological basis and cannot, like its predecessor, give rise among the uninitiated to confusion with the cutaneous lesions of Neural leprosy.

In the "Primary Classification" each of these types is subdivided into three according to degree of advancement. For more precise purposes in individual cases, however, a "Special Classification" subdivides the Neural type into three subtypes:—

- Anæsthetic (non-macular, polyneuritis) .. Na.
- Simple macular (with flat macules) Ns.
- Tuberculoid Macular (minor and major) .. Nt.

These subtypes may be combined one with another or even with the Lepromatous (L) type, and be further subdivided according to degree, as in the primary classification

From a practical point of view, the simple macule may be regarded as the "inactive macule" of former days, and the "tuberculoid" as an "active macule." The major tuberculoid lesion, of which very few occur at Makogai, may readily be mistaken for one of a Lepromatous nature, and may explain certain instances where in the past one has been astonished at the rapid and complete retrogression under treatment of "Cutaneous" lesions.

For general purpose the primary classification suffices, and will alone be used in the following references.

TABLE I.—RACE IN RELATION TO TYPE.

1938.	Neural 1		Neural 2		Neural 3		Lepromatous 1		Lepromatous 2		Lepromatous 3		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Fijian	6	5	27	21	3	1	5	2	29	8	8	1	78	38	116
Indian	11	1	29	14	2	2	21	9	81	21	11	..	155	47	202
Solomon Islanders ..	8	1	7	3	..	..	5	1	11	2	2	..	33	7	40
Rotuman	4	4	6	2	..	..	1	1	9	2	..	..	20	9	29
Cook Islanders	2	2	4	4	1	..	3	1	3	9	5	..	18	16	34
Gilbert Islanders ..	4	..	1	3	..	..	3	1	12	3	3	3	23	10	33
Samoan .. ..	..	..	3	1	..	..	..	..	6	3	..	1	9	5	14
Tongan .. ..	..	..	1	1	1	1	..	1	1	5	1	1	4	9	13
Chinese .. ..	..	..	1	..	..	..	1	..	3	..	2	..	7	..	7
Niue Islanders .. ..	..	1	..	1	..	..	..	..	2	1	..	..	2	3	5
Maori .. ..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1
Half-Caste .. ..	..	1	..	1	..	..	2	..	4	1	..	..	6	3	9
European .. ..	..	..	..	..	..	..	..	..	2	..	..	..	2	..	2
	35	15	79	51	7	4	41	16	163	55	33	6	358	147	505
Total	50		130		11		57		218		39		505		

Table I shows the five hundred and five patients examined at the end of the year arranged according to race and type of disease. Those admitted during the final quarter of the year were omitted as being unlikely to offer any evidence, favourable or unfavourable, as to progress under treatment. It will be noted that one hundred and ninety-one (37·8 per cent.) of our cases are Neural, and three hundred and fourteen (62·2 per cent.) Lepromatous. That is to say that at least the latter proportion should be regarded as definitely infectious.

Fijians, with 54·3 per cent. of Neural cases have a marked advantage over the Indians, of whom only 29·2 per cent. are Neural. Of the females 47·6 per cent. are Neural cases, and only 33·8 per cent. of the males.

DISTRIBUTION OF LEPROSY THROUGHOUT FIJI 1929-1933 (INCLUSIVE).

Black Spot—Represents individual cases.

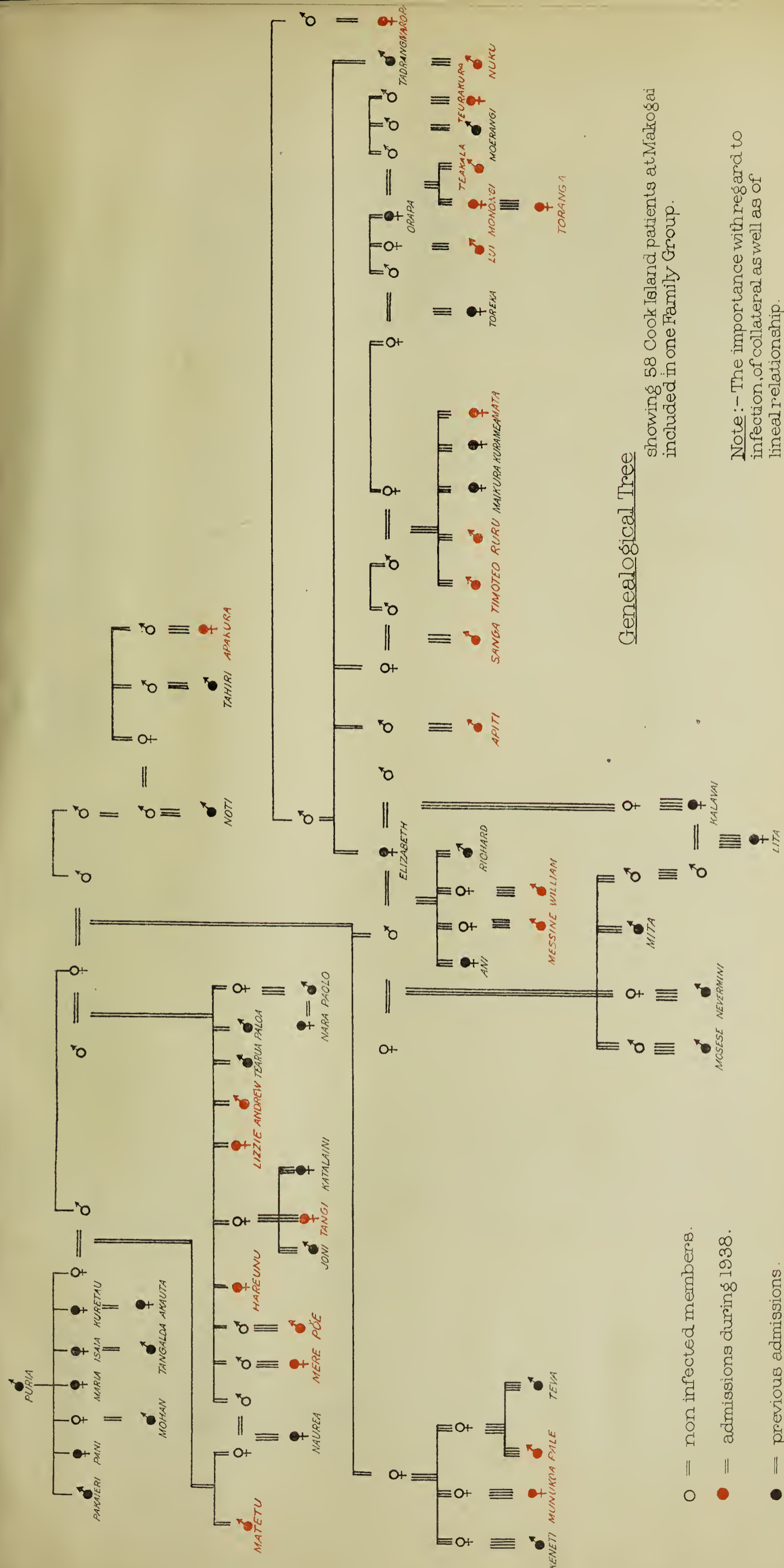
Red Spot—Represents ten or more cases.



DISTRIBUTION OF LEPROSY THROUGHOUT FIJI 1934-1938 (INCLUSIVE).

Black Spot—Represents individual cases.
Red Spot—Represents ten or more cases.





Genealogical Tree

showing 58 Cook Island patients at Makogai included in one Family Group.

Note :- The importance with regard to infection, of collateral as well as of lineal relationship.

- = non infected members.
- = admissions during 1938.
- = previous admissions.

There are eleven Neural-3 and thirty-nine Lepromatous-3 cases—a total of 9·9 per cent. for the extreme grades of leprosy, as compared with 21·2 per cent for the earliest grades.

Distribution of leprosy in Fiji.—The maps reproduced in the Appendix illustrate the origin of all cases admitted to Makogai from Fiji during the past two five-yearly periods. The distribution appears to depend exclusively on the distribution of population—allowance being made for the fact that the percentage of cases among Indians is higher than among Fijians. These maps differ in no marked degree from one prepared to show all cases admitted since the inauguration of the Hospital in 1911, and offer no support to the suggestion that leprosy is more prevalent in areas of higher rainfall and humidity. Viti Levu has a “dry side” and wet side”—Western and Eastern respectively—but there is no discrepancy between the distribution on the two sides that cannot be explained in terms of relative population.

Admissions.—The following Table shows the one hundred and thirty-five admissions arranged according to race and type of leprosy. Neural cases amount to 64·4 per cent. of the total, but eliminating those from outside the Colony, the proportion is not so good. Eleven out of thirteen Fijians admitted were Neural, but only seventeen out of thirty-seven Indians. The latter finding indicates the need for a more effective search for leprosy among the Indians of Fiji. This might be achieved by the training at Makogai of Indian Medical Practitioners in the diagnosis of early leprosy; by closer medical inspection of Indian schools; and possibly by a warning to employers of labour as to the desirability of medical examination of their employees. The latter precaution is particularly desirable in the case of those employed in domestic service, &c., several of our patients having previously worked as cooks, stewards, house-boys and nursemaids, as well as a few in bakeries and dairies.

TABLE II.—ADMISSIONS ACCORDING TO RACE AND TYPE.

1938.	Neural 1		Neural 2		Neural 3		Lepromatous 1		Lepromatous 2		Lepromatous 3		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Fijians. 	4	..	4	3	..	..	1	1	..	..	..	..	9	4	13
Indians 	4	..	10	3	..	..	6	2	10	2	..	..	30	7	37
Solomon Islanders ..	..	..	..	1	..	..	..	..	2	1	..	..	2	2	4
Cook Islanders ..	21	15	1	1	..	..	..	1	2	..	1	1	25	18	43
Gilbert Islanders ..	6	4	4	..	..	..	2	..	4	3	6	1	22	8	30
Samoaan .. ..	..	..	5	1	..	..	..	..	1	..	..	..	6	1	7
European .. ..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1
	35	19	24	9	..	..	9	4	20	6	7	2	95	40	135
Totals ..	54		33		..		13		26		9		135		

The Cook Island admissions are somewhat remarkable from more than one point of view. Out of the forty-three admissions, thirty-six are Neural-1 cases, so that results of treatment should be correspondingly good. This may, I think, be largely credited to the interest and diagnostic skill of John Numa, who before his return to the Cook Islands as a Medical Practitioner was sent to Makogai to study leprosy. His results certainly justify the policy.

Another point of interest is that twenty-four of these newly admitted cases belong to a family group linked together by the ramifications of marriage relationships as illustrated in the accompanying Genealogical Tree, fifty-eight of whose members have contracted leprosy and been admitted at Makogai. The Tree illustrates very clearly the effect upon the spread of leprosy of intermarriage in a small community. All the members of this group had been closely associated with the island of Palmerston in the Cook Islands, and if not permanently resident there, returned from time to time.

Of the remaining nineteen Cook Island admissions, a further eight had one or more close relations at Makogai.

This tendency to familial spread of leprosy is not, however, confined to the Cook Islands. Of the thirty Gilbert Island admissions, eighteen found relations here, including two grandmothers, three fathers, one mother, seven brothers, four sisters, five uncles, one aunt and two first cousins. Five of the thirteen Fijians were related to patients already at Makogai, and ten of the thirty-seven Indians. Among the latter, one girl had a father, mother, three sisters and a brother here, while another found the brother and two sisters of her mother and the son of another sister. The remaining eight had among them three mothers, two fathers, three brothers and a sister. One of the Solomon Island admissions had a father and brother already here as patients.

These facts indicate very clearly the necessity, from the preventive point of view, of thorough periodical examination of all family contacts.

Deaths.—Certified causes of death were as follows:—

Leprous cachexia, exhaustion, &c.	..	..	21
Pulmonary tuberculosis .	..	..	5
Nephritis . . . .	..	..	3
Heart failure . . . .	..	..	2
Osteomyelitis . . . .	..	..	1
Cerebral hæmorrhage . .	..	..	1
Meningitis . . . .	..	..	1
Cavernous sinus thrombosis	..	..	1
Disseminated sclerosis . .	..	..	1

This is a much higher proportion of deaths directly attributed to the effects of leprosy than usual, but is easily explained by the fact that four of the deceased had been more than twenty years at Makogai and that although three had been admitted less than six months before death, the average duration was nearly nine years.

In the following Table deaths are classified according to race and type of disease. It will be seen that the death rate of Fijian patients is much higher than that of the Indians, but in this connection it should be pointed out that two of the Fijians had been at Makogai for twenty-six years and one for twenty years, and none of the Indians had been here more than fifteen years.

TABLE III.—DEATH RATE.

1938.	Neural 1	Neural 2	Neural 3	Lepromatous 1	Lepromatous 2	Lepromatous 3	Total.
Fijian .. ..	.	5	2	.	4	5	16
Indian .. ..	.	2	.	4	6	.	12
Solomon Islanders	.	.	1	.	.	.	1
Rotuman	1	.	.	.	.	.	1
Chinese .. ..	.	.	.	.	1	1	2
Samoan .. ..	.	.	.	.	1	.	1
Gilbert Islanders	1	.	.	.	1	1	3
	2	7	3	4	13	7	36

One-third of the deaths were among those classified as Neural, and three of these showed extensive deformities. Twenty were of the moderately or very advanced Lepromatous type.

The deaths of Neural-1 cases were caused by meningitis and pulmonary tuberculosis. Two of the three deaths among Gilbert Islanders were due to pulmonary tuberculosis, which has been responsible for more than 50 per cent. of the deaths occurring among them since their first arrival at Makogai in October, 1935.

Treatment.—The Report of the Sub-committee on Treatment of Leprosy appointed by the Cairo Congress was, on the whole, cautious, owing to the need for reconciling conflicting views based on experience in widely separate parts of the world. Its recommendations may therefore be accepted as safe and free from extreme optimism or pessimism.

It points out that “For the improvement and maintenance of the general health of the patient: (a) it is of very real importance that the diet should be liberal, well-balanced, and rich in vitamins; (b) healthy, moderate exercise in the form of occupational therapy and out-door exercise is of value; and (c) it is important to eliminate intercurrent diseases.”

(a) Certain reports, particularly from Africa, suggest that most early cases of leprosy will clear up as a result of merely improving the diet. This is not our experience in Fiji, the explanation of the difference probably lying in the fact that the average patient admitted from Fiji is not markedly undernourished, and that the very slight infections, whose translation into clinical signs is dependent on a deficient diet, do not appear here.

Unfortunately little enough is yet known as to the nutritive value of diets common in Fiji. Apart from general rations, every able-bodied patient is given a garden, and encouraged to produce his own fresh vegetables by a cash allowance according to the amount of his produce. The ration allowance entitles him, amongst other items, to rice or fresh vegetables. If he produces sufficient vegetables to replace the rice, he is entitled to the price of the latter.

During the year 1938 patients received a total of £973 15s. 0d. in this way, and the money so gained enables them to supplement their diet with additional bread, meat, butter, &c., from the co-operative store.

(b) With regard to exercise, this is provided in part by the gardening already mentioned. In addition, patients are trained in building with its ancillary occupations, and all buildings in Hospital and villages are erected and maintained by patients, who are paid at slightly below current rates for the Colony in general. During 1938, a sum of £1,008 17s. 10d. was paid to patients for public works.

It has been urged by advocates of the voluntary system of leprosy control, whose experience is mainly limited to India and Africa where compulsion is impossible from a financial, if from no other, standpoint, that under compulsion, patients have to be so heavily bribed to compensate for their loss of liberty, that they sink into a condition of slothful indolence which renders useless any attempt at treatment. The facts and figures given above will probably serve to indicate that this need not be so. The two sums mentioned are not bribery but payment for work done, and I think results of treatment at Makogai will not suffer by comparison with those of any Hospital under the voluntary system.

On the lighter side, cricket, football and tennis are popular. Each village community has its own teams, and competition is keen. Prizes are offered for the winning teams from funds donated for the purpose, and recently a patient has himself presented a small silver cup to be awarded to the winning cricket team each year.

It will probably surprise the opponents of compulsory segregation to realise that the games are entirely voluntary (as of course is all Government work, apart from keeping the Hospital and villages clean) and are organised by the patients themselves. If small prizes are to be regarded as in the nature of bribery, it is, of course, necessary to plead guilty, but in the good company of most sports organisations throughout the world.

It is evident, in short, that even under the system of compulsory segregation, a little encouragement will produce the fullest possible co-operation of the patients, and that there is none of the feeling of grievance against authority here that is regarded, in some circles, as inseparable from the system.

(c) The important intercurrent diseases met with here include syphilis among the Indian patients and yaws among the South Sea Islanders; hookworm infestation, which is kept well under control by periodic examination and treatment where necessary; filariasis, for which, unfortunately little can be done; and skin diseases, including scabies and the various ringworms.

The Congress further agreed that "Hydnocarpus oil and its esters intramuscularly, subcutaneously, and intradermally remain, so far as our present knowledge goes, the most efficacious drugs for the special treatment of leprosy." It will be noted that the Report was careful to avoid the word "specific" as applied to the treatment.

Treatment here has continued with iodised (0·5 per cent.) Hydnocarpus oil. Although a thick product in the cold, it is easily injected when warm. Injection abscesses are at a minimum and patients appear to tolerate the injections well.

The much vaunted dye treatment of a year or so ago appears to be under a cloud at present, but we continue to inject it at request into individual nodules, which are usually flattened out by its use.

Chatterjee's discovery that in many cases of perforating ulcer, the tibial nerve posterior to the ankle is markedly tender is important. His consequent suggestion of injection along the course of the nerve, as well as into the tissues surrounding the ulcer is also successful in many cases, although, as is only to be anticipated in so chronic a condition, in which moreover the bone is liable to be affected, some of the cases later relapse.

Results of treatment.—Details of the fifty-three cases conditionally discharged during the year as having been clinically and bacteriologically free from leprotic activity for two years, are shown in the following Table, where the cases are classified according to their race and type of leprosy.

TABLE IV.—DISCHARGES ACCORDING TO RACE AND TYPE.

1938.	Neural 1		Neural 2		Neural 3		Lepromatous 1		Lepromatous 2		Lepromatous 3		Total		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	
Fijian	3	..	2	3	..	..	..	..	1	..	..	..	6	3	9
Indian	1	2	3	1	..	..	2	..	5	..	..	..	11	3	14
Rotuman	1	4	6	5	..	..	..	..	..	..	..	..	7	9	16
Solomon Islanders . .	2	..	..	..	..	..	..	..	1	..	..	..	3	..	3
Cook Islanders . . .	2	2	2	..	..	..	1	..	..	..	..	..	5	2	7
Samoa . . . . .	..	..	..	..	..	..	..	..	1	..	..	..	1	..	1
Gilbert Islanders . .	..	3	..	..	..	..	..	..	..	..	..	..	..	3	3
	9	11	13	9	..	..	3	..	8	..	..	..	33	20	53
Totals	20		22		..		3		8		..		53		

It will at once be noted that forty-two of the discharges were Neural in type, and only eleven Lepromatous. More striking, however, is the fact that of the eleven Lepromatous cases, seven (half the number of Indians discharged) were Indians. On the other hand, only one Fijian out of nine discharges, one Solomon Islander out of three, one Cook Islander out of seven, and none of the sixteen Rotumans or of the three Gilbert Islanders were Lepromatous. The curious fact is that in their own country, Indians show a marked preponderance of Neural cases: in Fiji, although less than 30 per cent. of their cases are Neural, they react better to treatment than do the other races represented here.

TABLE V.—RACE IN RELATION TO PROGRESS.

1938.	Arrested.		Quiescent.		Improved.		Stationary.		Worse.		Total.		
	M	F	M	F	M	F	M	F	M	F	M	F	
Fijian	2	4	17	12	28	9	23	11	8	2	78	38	116
Indian	1	1	23	12	81	17	44	11	6	6	155	47	202
Solomon Islanders.	1	..	4	2	8	3	15	2	5	..	33	7	40
Rotuman .. ..	..	..	6	6	1	..	10	3	3	..	20	9	29
Cook Islanders ..	..	..	5	3	3	4	8	6	2	3	18	16	34
Gilbert Islanders .	..	..	3	2	8	3	10	4	2	1	23	10	33
Samoaan .. ..	..	..	1	..	4	3	3	2	1	..	9	5	14
Tongan .. ..	..	..	..	1	1	4	1	2	2	2	4	9	13
Chinese .. ..	..	..	..	..	3	..	3	..	1	..	7	..	7
Niue Islanders ..	..	..	..	..	2	3	..	..	..	..	2	3	5
Maori .. ..	..	..	..	..	..	..	1	..	..	..	1	..	1
Half-Caste .. ..	..	..	..	2	2	..	3	1	1	..	6	3	9
European .. ..	..	..	..	..	2	..	..	..	..	..	2	..	2
	4	5	59	40	143	46	121	42	31	14	358	147	505
Totals ..	9		99		189		163		45		505		

Table V showing the five hundred and five patients here at the end of the year, arranged to demonstrate their race in relation to progress, indicates that this anomaly with regard to discharge is no isolated phenomenon due to the paucity of discharges. By adding the "Arrested," "Quiescent" and "Improved" columns together, the total figures of improvement are found to be seventy-two or 62 per cent. of their numbers for the Fijians, one hundred and thirty-five or 66·8 per cent. for the Indians, and two hundred and ninety-seven or 58·8 per cent for all races. Combining these figures with those for discharges to obtain the true total of improved cases, we obtain eighty-one (64·8 per cent.) for the Fijians, one hundred and forty-nine (69 per cent.) for Indians, and three hundred and fifty (62·7 per cent.) for all races.

Referring to sex differences we find that results of treatment reflect the higher percentage of Neural cases among the women. Thus, the women have, as already pointed out, 47·6 per cent. of their number classified as Neural as against 33·8 per cent. of the males and show a total of 111 cases (75·5 per cent.) improved, as against 239 (66·8 per cent.) of the men.

TABLE VI.—PROGRESS IN RELATION TO TYPE.

1938.	Arrested.	Quiescent.	Improved.	Stationary.	Worse.	Total.
Neural-1 .. ..	..	28	13	8	1	50
Neural-2	5	57	37	27	4	130
Neural-3	3	2	1	5	..	11
Lepromatous-1 ..	1	7	31	14	4	57
Lepromatous-2 ..	..	5	103	81	29	218
Lepromatous-3 ..	..	..	4	28	7	39
Total ..	9	99	189	163	45	505

The Table indicating progress in relation to type, illustrates very well the better prognosis in the less severe grades of leprosy. Adding to its figures those of discharges, the following fairly regular gradation of percentages for total improvement is found:—

	Total improved.	Percentage improved.
Neural-1	61	87·1 per cent.
Neural-2	121	79·6 „
Neural-3	6	54·5 „
Lepromatous-1 ..	42	70·0 „
Lepromatous-2 ..	116	51·3 „
Lepromatous-3 ..	4	10·3 „
Total ..	350	62·7 „

Public Works.—New buildings erected during the year include a large four-roomed house in the Gilbert Island village to accommodate six patients to a room; a roomy ward in the Hospital area to house twenty-four male “advanced” patients, complete with attached bathrooms and lavatories; new wash-houses and additional bathroom and lavatory accommodation in the women’s compound; a much needed extension to the main offices; and the provision of new electrical installations at Dalice and Nasau. The latter consist of two sixteen-horse power Gardiner heavy duty Diesel engines. The one at Dalice is furnished with 110 volt storage batteries for all night use; that at Nasau also runs a refrigerator producing about one ton of ice per day, and a cold chamber which can accommodate up to four carcasses of beef.

General maintenance work and painting kept gangs of patients busy throughout the year.

Makogai produce.—From the Hospital poultry-yard which is managed by the Reverend Mother with the assistance of a Native Sister and a few of the young patients from the Girls’ school, 333 fowls and 6,296 eggs were issued to the Hospital kitchen. In addition many of the patients have their own fowls and ducks and carry on quite a trade among themselves.

Eleven tons of meat and 210 lb of dripping, in addition to 6,179 gallons of milk were issued to patients from the farm.

Sixty-two thousand nine hundred and seventy-six loaves of bread from the island bakery were issued to the patients, and 12,193 loaves sold to patients and staff produced more than £250 for revenue.

About 1½ tons of soap made on the island from coconut oil were issued for the use of patients. Copra is produced outside the patients’ area and surplus copra sold in Suva realised £121.

The Hydnocarpus trees continue to do well and about one hundred additional trees have been planted. More than five gallons of oil were produced during the year by the older trees.

The patients’ Co-operative Store continues to increase in popularity, the annual turnover amounting to over £3,000. The Nasau Staff Canteen showed receipts of nearly £2,000.

VISITORS.

Visitors during the year included the Right Honourable Earl Beatty and Countess Beatty; Sir Henry and Lady Scott; Dr. George K. Strode of the Rockefeller Foundation, New York City; and Dr. S. M. Lambert, Representative in Fiji of the Rockefeller Foundation; Dr. A. L. Hoops, Principal, Civil Medical Officer (retired), Straits Settlements; Dr. Ellison, Chief Medical Officer, Cook Islands; Dr. V. W. T. McGusty, Director of Medical Services, Fiji, and Mrs. McGusty; Miss Lea, Nursing Superintendent, Suva; Drs. D. W. Hoodless, L. Isaac, D. C. M. Macpherson, R. W. D. Maxwell (and Mrs Maxwell), and Jas. Taylor (and Mrs. Taylor), of the Fiji Medical Service; Mr. H. S. Mount, Dental Surgeon, Suva; Mr. N. B. Casey, Superintendent of Prisons; Messrs. A. A. Ragg, C. M. Teulon, H. Sabben and H. G. Browne of the Public Works Department, and others.

TABLE OF STATISTICS.

	European.		Half-Caste.		Solomon Is.		Fijian.		Indian.		Rotuman.		Chinese.	Samoan.		Maori.	Niue Is.		Cook Is.		Tongan.		Gilbert Is.		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	M	F	M	M	F	M	F	M	F	M	F	M	F
In the hospital 1/1/38..	2		6	3	37	6	89	47	163	50	27	20	9	11	5	1	2	3	22	21	5	9	24	15	398	179=577
Admissions	1				2	2	9	4	30	7				6	1				25	18			22	8	95	40=135
Deaths					1		11	5	8	4		1	2	1									1	2	24	12= 36
Conditional discharges .					3		6	3	11	3	7	9		1					4	3				3	32	21= 53
Repatriation									4																4	= 4
Total inmates in hospital 31st December, 1938 ..	3		6	3	35	8	81	43	170	50	20	10	7	15	6	1	2	3	43	36	5	9	45	18	433	186=619
Totals ..	3		9		43		124		220		30		7	21		1	5		79		14		63		619	

1938.		Injections.							Total of injections.	Dressings.	Patients dressed.	Operations.	Autopsies.	Laboratory examinations.			Total of Laboratory examinations.
		Chaulmoogra oil.	Salvarsan.	Dilester.	Manganese.	Methylene blue.	Insulin.	Various other injections.						Urine analyses.	Bacteriological examinations.	Parasitic examinations.	
January ..	..	829	20	4	9	..	83	22	967	7,182	3,690	.	.	66	27	34	127
February ..	..	1,861	40	9	3	14	72	46	2,045	6,672	3,040	.	.	69	141	24	234
March ..	..	2,265	54	8	18	21	79	20	2,465	6,570	3,510	5	.	75	198	29	302
April .	..	778	22	5	5	24	76	159	1,069	6,494	3,281	.	.	75	328	22	425
May .	..	1,231	33	1	10	15	66	124	1,480	6,336	3,024	.	.	71	26	33	130
June .	..	1,804	48	6	4	17	69	32	1,980	5,746	2,856	.	.	65	28	63	156
July .	..	1,808	61	3	14	6	70	29	1,991	5,899	2,975	.	.	69	86	68	223
August ..	..	1,366	49	4	18	13	67	16	1,533	5,904	3,006	.	.	82	103	10	195
September ..	..	1,609	23	2	10	4	60	11	1,719	6,409	2,856	1	.	70	29	29	128
October ..	..	1,910	22	8	6	9	62	20	2,037	8,429	3,332	.	.	77	69	38	184
November ..	..	2,125	16	8	14	17	60	4	2,244	7,752	3,706	.	.	67	88	37	192
December ..	..	1,047	13	4	..	2	62	68	1,196	7,398	3,564	.	.	73	39	38	150
Totals ..	..	18,633	401	62	111	142	826	551	20,726	80,791	38,840	6	.	859	1162	425	2,446

RAINFALL 1938 (in inches).

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
4.705	6.52	7.715	5.045	7.315	5.095	1.555	3.805	8.675	5.975	8.51	19.44	84.355

ANNUAL REPORT ON WESTERN PACIFIC HEALTH SERVICE

BY DR. S. M. LAMBERT FOR THE YEAR 1938.

GENERAL SURVEY OF FIJIAN DISEASES.

Tuberculin Survey.—In January, 1937, Vakatawa, a graduate of the Central Medical School class of December, 1936, was given me to make a tuberculosis survey of the Fijian race. During the early months of the year he received special training in clinical and sputum examinations. In June, 1937, he began work in Colo East. In the following tables are presented his work to date in four Provinces—Colo East, Namosi, Serua and Rewa. He made general examinations of each person for all apparent pathological conditions; clinical examinations especially of the lungs; sputum examinations of all clinically positive; tuberculins of the whole population. In the first Province his work was not understood and a second tour had to be made as those who thought they had tuberculosis evaded him; this second round was made with police assistance. Since then, though he still has a policeman, with fuller understanding he has the full co-operation of the natives themselves. No cases of tuberculosis are missed and the whole population except those away from home at work in other places or away on occasion, are examined.

The resultant picture is an accurate one of disease conditions as they exist in Fiji among the native race, I know of no other survey so complete in the South Pacific; it will locate the areas where special work has to be done, and will act as a yard-stick of progress to the medical efforts of the Colony. The most important section is that devoted to tuberculosis and I feel that the results are to be trusted as a picture of tuberculosis of the whole area. To be sure X-Ray photos of chests would be a great added asset but much of the area on Viti Levu is not accessible to the motor car and on the other islands there is no possibility of X-Ray work. As a by-product of the tuberculosis survey, the general survey which reveals many interesting figures, for instance, dental conditions which show a tremendous deterioration, probably due to dietary changes attendant on the process of native adjustment to Western life.

These statistics are given as a matter of record and little comment is made on them as they are too few for any general conclusion.

A complete examination for tuberculosis of each individual was made by Vakatawa beginning with a tuberculin test and concluding with a physical examination of the lungs and a sputum examination with standard oil immersion lens of stained specimens of those individuals who had a cough.

It must be clearly understood that a positive tuberculin test does not mean necessarily that the patient has clinical tuberculosis. It does mean that he has or has had an infection with tuberculosis which may be a minute lesion or larger lesions which are active or it may mean he has recovered entirely from it. The percentage of tuberculin positive Fijians is not greater than one would find in examining cross sections of any European community. The best measure of infection is his list of positive T.Bs. by clinical examination and positive by sputum which shows 61 positive clinically for pulmonary tuberculosis and 32 positive by sputum out of a total population of 8,110 Fijians.

The technique of the Mantoux tuberculin reaction is as follows:—

The intracutaneous test was used with standardised old tuberculin obtained from the Henry Phipps' Institute in Philadelphia, and is the same as that used by the Rockefeller Foundation everywhere in the field in order to make results comparable.

The intracutaneous test was carried out by injecting into the corium of the flexor surface of the forearm which had been cleansed with alcohol, 0.1 cc. of a 1 in 10,000 dilution of tuberculin, equal to 0.01 mg. of tuberculin. If after 48 hours no redness or edema was seen at the site of injection, 0.1 c.c. of the 1 in 100 dilution of tuberculin, equal to 1.0 mg. of tuberculin, was injected into the corium of the opposite arm. If after 48 hours redness and edema were absent the reaction was considered as negative and no further injections were made.

The results of the injections were read after 48 hours and the positive reactions were arbitrarily classified as one to four plus (1, ++, +++, ++++). A one plus (+) reaction is one that shows definite redness and an area of edema not exceeding 10mm. in diameter. A two plus (++) reaction is an area of definite redness and edema measuring between 10 to 15 mm. in diameter. A three plus (+++) reaction is characterised by marked redness with an area of edema exceeding 15 mm. in diameter; it is occasionally accompanied by a slight lymphangitis. A four plus (++++) reaction is one with extensive edema, redness and an area of necrosis. A negative reaction is characterised by the absence of definite redness or edema.

These statistics are given as a matter of record and little comment is made on them as they are too few for any general conclusion.

TABLE No. 1.
TOTAL TUBERCULINS.

Age Groups.	Colo East.			Namosi.			Serua.			Rewa.			Totals.		
	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%
0- 4 ..	335	9	3	235	..	..	134	3	2	337	3	1	1,041	15	1
5- 9 ..	421	73	17	220	28	13	135	16	12	372	14	3	1,148	131	12
10-14 ..	372	170	46	213	98	46	119	37	31	251	99	39	955	404	42
15-19 ..	145	94	65	157	97	61	80	57	71	199	150	75	581	398	69
20-24 ..	196	144	73	154	105	68	103	77	75	177	146	82	630	472	75
25-29 ..	214	180	84	164	115	70	64	50	78	199	169	84	641	514	80
30-34 ..	154	121	78	102	77	75	61	51	83	139	129	93	456	378	85
35-39 ..	121	102	84	104	77	74	39	33	84	111	106	95	375	318	84
40-44 ..	115	102	89	76	52	68	39	33	84	97	84	86	327	271	83
45-49 ..	95	85	89	70	51	73	42	34	81	115	106	92	322	276	85
50-54 ..	100	82	82	43	30	70	36	32	88	103	93	90	282	237	84
55-59 ..	37	31	84	31	25	81	31	27	87	55	46	84	154	129	83
60-64 ..	73	66	90	56	45	80	50	44	88	128	113	88	307	268	87
65-69 ..	27	23	85	16	11	69	6	5	83	11	10	91	60	49	82
70 plus ..	55	51	93	50	31	62	11	10	91	34	29	85	150	121	80
Adults ..	533	461	86	..	..	..	..	..	..	..	..	..	533	461	86
Children	148	..	..	..	..	..	..	..	..	..	..	..	148	..	..
Totals	3,141	1,794	57	1,691	842	49	950	509	53	2,328	1,297	55	8,110	4,442	54

Total examined, 8,110; positive, 4,442; per cent, 54.

TABLE No. 2.
TUBERCULINS BY SEX.
MALES.

Age Groups.	Colo East.			Namosi.			Serua.			Rewa.			Totals.		
	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%
0- 4 ..	172	5	3	139	..	..	65	1	1	168	1	1	544	7	1
5- 9 ..	200	39	19	121	12	11	62	6	10	187	5	27	570	62	1
10-14 ..	195	92	47	114	58	51	55	18	33	145	63	43	509	231	45
15-19 ..	68	42	62	70	43	61	32	23	72	82	60	73	252	168	66
20-24 ..	64	48	75	67	50	75	43	32	74	57	51	89	231	181	74
25-29 ..	74	60	81	67	42	63	30	26	87	81	75	92	252	203	80
30-34 ..	80	60	86	48	37	77	32	27	84	66	62	94	226	186	82
35-39 ..	63	53	84	61	48	79	15	15	100	65	63	96	204	179	87
40-44 ..	62	56	90	34	27	79	20	19	95	45	40	88	161	142	88
45-49 ..	52	45	86	29	22	76	14	13	93	50	48	96	145	128	80
50-54 ..	52	45	86	24	17	71	19	16	84	51	45	88	146	123	84
55-59 ..	25	23	92	15	11	73	18	16	89	30	23	76	88	73	83
60-64 ..	49	43	88	39	35	90	26	23	88	71	61	86	185	162	87
65-69 ..	18	14	77	8	4	50	3	3	100	7	6	86	36	27	75
70-plus ..	38	35	92	24	18	60	9	9	100	23	20	87	94	82	87
Adults ..	248	218	87	..	..	..	..	..	..	..	..	..	248	218	87
Children	74	..	..	..	..	..	..	..	..	..	..	..	74	..	..
Totals	1,534	878	57	860	424	49	443	247	55	1,128	623	55	3,965	2,172	55

Total males examined, 3,965; positive, 2,172; per cent, 55.

FEMALES.

Age Groups.	Colo East.			Namosi.			Serua.			Rewa.			Totals.		
	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%	Ex.	Pos.	%
0- 4 ..	163	4	2	96	..	..	69	2	3	169	2	1	497	8	2
5- 9 ..	221	34	15	99	16	16	73	10	14	185	9	49	578	69	12
10-14 ..	177	78	44	99	40	40	64	19	30	106	36	34	446	173	38
15-19 ..	77	52	67	87	54	62	48	34	71	117	90	77	329	230	62
20-24 ..	132	96	78	87	55	63	60	45	75	120	95	79	399	291	73
25-29 ..	140	120	85	97	73	75	34	24	71	118	94	80	389	311	79
30-34 ..	74	61	82	54	40	74	29	24	83	73	67	92	230	192	83
35-39 ..	58	49	84	43	29	61	24	18	75	46	43	93	171	139	81
40-44 ..	53	46	87	42	25	59	19	14	74	52	44	85	166	129	78
45-49 ..	43	40	93	41	29	71	28	21	75	65	58	89	177	148	83
50-54 ..	48	37	77	19	13	68	17	16	94	52	48	92	136	114	83
55-59 ..	12	8	67	16	14	87	13	11	85	25	23	92	66	56	85
60-64 ..	24	23	96	17	10	58	24	21	87	57	52	91	122	106	86
65-69 ..	9	9	100	8	7	87	3	2	67	4	4	100	24	22	91
70-plus ..	17	16	94	26	13	50	2	1	50	11	9	82	56	39	69
Adults ..	285	243	85	..	..	..	..	..	..	..	..	..	285	243	85
Children	74	..	..	..	..	..	..	..	..	..	..	..	74	..	..
Totals	1,607	916	57	831	418	50	507	262	52	1,200	674	56	4,145	2,270	54

Total females examined, 4,145; positive, 2,270; per cent., 54.

TABLE No. 3.
PULMONARY T.B. EXAMINATIONS.

Total examined	Positive Clinically.									
	Colo East, 3,141		Namosi, 1,691		Serua, 950		Rewa, 2,328		Totals, 8,110	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Age Groups.										
0- 4 .. ..	..	..	1	..	..	..	..	1	1	1
5- 9 .. ..	..	..	..	1	..	..	..	..	..	1
10-14	1	1	..	2	..	..	1	1	2	4
15-19	1	..	..	..	..	..	1	1	3	1
20-24	2	..	..	..	..	..	..	..	2	..
25-29	3	2	..	1	..	..	1	..	4	3
30-34	3	1	2	..	..	..	..	1	5	2
35-39 .. ..	..	1	..	..	1	1	1	2	2	3
40-44	1	2	1	..	..	..	1	..	3	2
45-49	3	1	..	1	..	..	1	..	4	2
50-54	6	..	..	..	..	..	..	..	6	..
55-59	2	..	1	..	..	..	..	..	3	..
60-64	2	..	1	..	..	..	1	..	4	..
65-69	1	..	..	..	..	..	..	..	1	..
70-plus . .	1	..	1	..	..	..	..	..	2	..
Totals ..	26	8	7	5	1	1	8	5	42	19
Grand Totals	34		12		2		13		61	

Total examined	Positive by Sputum.									
	Colo East, 3,141		Namosi, 1,691		Serua, 950		Rewa, 2,328		Totals, 8,110	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Age Groups.										
0- 4 .. ..	..	..	..	..	..	..	..	1	..	1
5- 9 .. ..	..	..	..	1	..	..	..	..	..	1
10-14 .. ..	..	1	..	2	..	..	..	1	..	4
15-19	1	..	..	..	..	..	1	..	2	..
20-24	2	..	..	..	..	..	..	..	2	..
25-29	1	1	..	1	..	..	1	..	2	2
30-34	1	1	2	..	..	..	..	..	3	1
35-39 .. ..	..	1	..	..	1	1	..	..	1	2
40-44 .. ..	..	1	1	..	..	..	1	..	2	1
45-49	1	..	..	..	..	..	..	..	1	..
50-54	2	..	..	..	..	..	..	..	2	..
55-59 .. ..	..	..	1	..	..	..	..	..	1	..
60-64	1	..	1	..	..	..	..	..	2	..
65-69	1	..	..	..	..	..	..	..	1	..
70-plus . .	..	..	1	..	..	..	..	..	1	..
Totals ..	10	5	6	4	1	1	3	2	20	12
Grand totals	15		10		2		5		32	

In June, 1937, 3,141 persons in Colo East were examined, of whom 34 were clinically positive and 15 positive by sputum. A year and a half later, in January, 1939, out of these 34 clinically positive persons four, who were also positive by sputum, were found to have died. All four of them died within four or five months after the diagnosis. Two others of those positive clinically and by sputum have become seriously ill.

TABLE No. 4.
TEETH.

Number examined:	Colo East, 2,013	Namosi, 1,023	Serua, 562	Rewa, 1,368
No. Teeth missing.	Persons	Persons.	Persons.	Persons.
1	88	46	43	47
2	147	41	31	53
3	27	3	10	17
4	58	18	10	24
5	9	5	3	3
6	42	15	12	4
Over	125 had 2,139 missing	51 had 859 missing	42 had 594 missing	77 had 1,213 missing
All missing	33	10	10	9
Number examined	3,141	1,691	950	2,328
Dental caries	388 had 1,458 carious teeth	202 had 789 carious teeth	174 had 517 carious teeth	396 had 1,252 carious teeth
Pyrrrohea .. ..	....	....	48	173

TABLE No. 5.
ELEPHANTIASIS.

Number examined:	Colo East, 3,141	Namosi, 1,691	Serua, 950	Rewa, 2,328
Right leg	1	12	5	2
Left leg	1	12	..	2
Both legs .. ..	..	..	4	6
Right arm .. ..	..	6	..	4
Left Arm .. ..	..	5	..	..
Both arms .. ..	..	..	..	1
Scrotum .. ..	..	1	1	1
Legs and arms ..	..	..	1	..

TABLE No. 6.
EYE CONDITIONS.

Number examined:	Colo East, 3,141	Namosi, 1,691	Serua, 950	Rewa, 2,328
Totally blind	7	1	1	2
Blind in one eye ..	28	7	8	5
Single cataract. ..	25	5	6	12
Double cataract ..	12	5	2	5
Single entropion ..	..	3	..	2
Double entropion ..	30	34	13	16
Pterygium .. ..	..	..	1	1
Internal strabismus ..	3	2	..	1
Conjunctivitis . ..	13	3	..	..
Trachoma .. ..	..	4	..	..
Ptosis of the eyelid ..	..	3	..	..
Opacity of corona ..	..	..	4	..

TABLE No. 7.
YAWS.

Number examined:	Colo East. 3,141	Namosi, 1,691	Serua, 950	Rewa, 2,328
	1 2 3	1 2 3	1 2 3	1 2 3
	5 6 12	9 4 11	. 1 .	. . 1

Just a few years ago a table on yaws conditions in Fiji would have filled the most prominent position in such a survey. To-day, among 8,110 Fijians only 49 obvious lesions appeared in the survey showing that it is a minor condition to-day. However, 47 of these conditions appear in the two mountain provinces of Namosi and Colo East, 24 firsts and seconds are a threat to the children of both provinces.

TABLE No. 8.
OTHER GENERAL CONDITIONS.

Number examined:	Colo East, 3,141	Namosi, 1,691	Serua, 950	Rewa, 2,328
Filariasis .. ..	..	1	..	1
Paralysis	6	1	..	1
Enlarged glands ..	26	7	3	2
Goitre	10	1	..	..
Seborrhea	3	17	9	6
Kyphosis	9	1	1	1
Cyst	2	2	..	7
Abscess	3	3	3	1
Deaf	3	5	..	1
Dumb	2	..	1	..
Hydrocele .. ..	..	3	1	3
Glossitis .. ..	..	1	2	2
Talipes valgus ..	..	2	..	1
Hernia.. ..	..	..	2	..
Otorrhea .. ..	..	..	1	..
Imbecile	3	..	..	..
Lordosis	4	..	..	..
Tumour.	3	..	..	..
Ulcers .. ..	..	..	..	2
Tinea	334	228	202	255
Scabies . ..	170	135	37	106

OTHER EXTRACTS FROM THE ANNUAL REPORT OF DR. S. M. LAMBERT FOR 1938

Soil Sanitation Campaign.—Work has continued during the year, being largely confined to the island of Viti Levu although there has been considerable demand for slabs from the island of Vanua Levu. The Sanitation Campaign, while on a small scale, is continued from year to year. The statistics for the year follow:—

TABLE No. 9.
PERIOD FROM 1ST JULY, 1938–31ST DECEMBER, 1938.

District.	No. homes surveyed.	No. holes dug.	No. holes bored.	No. slabs supplied.	No. pedestals supplied.	No. completed.
Rewa—						
Indians and others	218	62	13	11	280
Tailevu—						
Fijians..	187	....	....	....	187
Naitasiri—						
Fijians..	44	....	....	....	38
Colo North—						
Fijians..	84	....	....	....	84
Suva—						
Medical Officer of Health	33	....	20	11	33
	566	62	33	22	622

TABLE No. 10.
TOTAL FOR THE YEAR, 1938.

District.	No. homes surveyed.	No. holes dug.	No. holes bored.	No. slabs supplied.	No. pedestals supplied.	No. completed.
Rewa—						
Indians and Others .. ..	....	600	134	28	22	734
Tailevu—						
Fijians.. ..	....	602	....	....	....	595
Navua—						
Indians	82	....	82	58	....	82
Naitasiri—						
Fijians.. ..	....	81	....	....	....	69
Ba—						
Indians and Others .. ..	....	....	....	50	6	....
Ra—						
Indians and Others .. ..	....	....	....	....	....	....
Colo North—						
Fijians.. ..	....	84	....	....	....	84
Colo East—						
Fijians.. ..	....	47	....	....	....	47
Suva—						
Medical Officer of Health ..	....	53	....	28	23	53
Taveuni—						
Indians and Others .. ..	....	....	....	4	4	8
	82	1,467	216	168	55	1,672

Surveys.—During the year surveys were made of American Samoa in February and the island of Niue during March, reports of which have been forwarded to the Foundation.

Central Medical School.—This institution has had another good year. The future of the medical school seems at this moment as assured as any project can be in a world of sudden changes. It had its incipency fifty years ago, although for many years everything was of a most primitive standard. When I came in 1922 the students still had no class-rooms, lectures being given by the Chief Medical Officer and by the Medical Superintendent. Aside from these men, knowledge was accumulated by hard work, by out-patient work, and by making the rounds with the medical officer. In 1923 when the new Colonial War Memorial Hospital was opened, a lecture-room was assigned them together with the nurses. The next step in advance was the construction and functioning of the new school with the co-operation of the other Pacific groups. This co-operation has now gone on for ten years with each year an added impetus as the graduates have proved their value by actual service.

The great lack has been practical instruction in modern public health and preventive medicine; also the school was planned on a three-year basis, this being changed in 1931 to a four-year basis which has overcrowded the school.

The background of the school is the War Memorial Hospital. Anything which betters this, betters the school. During the past two years a fine new European Nurses' Quarters has been built; a fine new Children's Ward which also enlarged the Medical Ward underneath, a new heating plant for hot water and sterilisation. A new building is also projected for this year, a dormitory which will house the medical students which will be modern. The old dormitory will be torn down, its site being used, it is hoped, for a two-storey building, the lower floor to take care of the dispensary and out-patients thus making additional space for beds in the hospital, the upper floor to be a health center and to relieve a congested school. The old European Nurses' Quarters will be used temporarily as a dormitory* for an increased staff of native nurses who, it is hoped, will gradually take over all nursing in the Hospital under trained supervision. With a health center the last six months of their three-year course will be spent in the health center, where they will share with the medical students a modern course in public health nursing.

The vastly improved training of native nurses has a double purpose. They will make better nurses to carry health into the native home; also it will mark a great step forward in the education of native girls giving them a new career and helping raise the social standard of Fijian natives. Students of sociology say the race only advances as the women advance—education on men alone is largely wasted—unless one furnishes women equally as educated as the men, these are pulled back to the women's standard. This is my exact observation now for many years. Our boys when they graduate have none of an equal education standard to marry and tend to slip further and further back into native ways. Those who have married nurses have maintained higher social standards. When a nurse marries a native doctor she is not lost to the community but becomes an unsalaried government representative. I would like to see every Native Medical Practitioner leave school with a nice well-trained native nurse as a wife.

Scholarship.—In October, Miss M. Cleary went to the United States of America and Canada on a Fellowship preparing herself to head the new school for native health nurses in Fiji.

THE PROBLEM OF TUBERCULOSIS IN FIJI.

By Dr. V. W. T. McGUSTY, O.B.E., Director of Medical Services.

A great deal of misinformed talk has been abroad in Fiji concerning tuberculosis and the methods of treating the social problems arising out of that disease, which has become more poignant since the Great Council of Chiefs during its 1933 Session passed a resolution requesting the Government to establish a tuberculosis sanatorium, and offering to contribute towards its cost the sum amounting to approximately £6,000, which was then standing to the credit of the Fijians under the heading of Schedule B Crown Lands. The belief of the Fijian Chiefs in Council that it is possible to solve the tuberculosis problem in this simple though costly manner is, also, unfortunately, held by many influential non-Fijians and, as a consequence, much misunderstanding exists in regard to what is alleged to be Government inaction. It is, therefore, desirable for me to examine the question as to how far it is practicable to effect the cure and prevention of tuberculosis by what I may here refer to as the sanatorium method, with particular reference to the suitability of such a method in the circumstances now existing in this Colony.

2. I may, perhaps, be permitted at this point to remark that the generous provision which is made in successive annual budgets gives ample evidence of the interest of Government in matters affecting the public health, both in its curative and its preventive aspects, and that the fact of there having been no spectacular drive against tuberculosis does not justify the assumption that this disease is not receiving due attention. Difficulty in combating tuberculosis is a universal experience, and evidence is still lacking to prove that the sanatorium is an attainable panacea.

3. Tuberculosis may have made its first appearance when occasional visitors began to come to these islands as long ago as the end of the eighteenth century, but it is much more likely to have been introduced with the larger number of aliens who came to the country in increasing numbers from the middle of the nineteenth century onwards. There can be no doubt of the toll that has been taken by tuberculosis since its introduction, or of the fact that it was heaviest among the unprotected Fijians. Nevertheless, those medical officers who have served longest have come to the conclusion that there are signs that the disease as affecting the Fijians is on the wane as regards both its incidence and severity, and that its decline is attributable to the building up of a resistance to infection.

4. In the light of our present knowledge, tuberculosis still presents a serious and complex problem which has not as yet been conclusively investigated. More information is undoubtedly required regarding its incidence, and more active measures may be necessary to provide for its cure and prevention. However, before giving further consideration to the local situation it is desirable to consider some general aspects of the tuberculosis problem as they have been revealed in other countries.

5. The tuberculosis infection of human beings is now believed to come either from a human or from a bovine source. The transmission of infection from man to man takes place by direct inhalation of the *Bacillus Tuberculosis* either from the breath of a patient, or from dust that has been infected by him. The commonest point of attack of the bacillus, which is derived from the human source, is the lungs. Bovine tuberculosis is communicated by drinking the milk of infected cows and once it enters the alimentary canal of man the organism is conveyed in the blood stream to produce its lesions, as a rule, in parts of the body other than the lungs. The trespass of the infection from one of these sources into the domain of the other is, notwithstanding what has been said, by no means uncommon. From these observations it will naturally be assumed that the non-milk drinking Fijians are generally infected from human sources, and that Europeans and Indians are infected from both sources.

Every infant is free at birth from infection with tuberculosis, and it is also without resistance to attack by the tubercle bacillus. Therefore, if an infant is exposed to an attack in force, *e.g.*, through contact with a parent suffering from pulmonary tuberculosis, it is liable to succumb before it can acquire the power to resist the tubercle bacillus. Owing to the universality of the distribution of the infective organism, some degree of infection during infancy or childhood is unavoidable and, provided that the dose is not a lethal one, a resistance is established which increases year by year until middle age, when the individual and his contacts are reasonably well protected, the one against the harmful effects of tuberculosis, the other against infection from the particular source.

6. There would seem to be no such thing as congenital or unacquired resistance to tuberculosis and immunity to its active manifestations would appear to be the result of the individual's earlier contacts with infection. Experiments carried out with tuberculin have indicated that whereas only ten per cent. of children under three bear signs of having been infected, the percentage rises to one hundred in an adult working class population of an average age of forty to fifty. In estimating the value of a tuberculin test in human beings it should be understood that a positive reaction indicates the establishment of resistance, regardless of whether the disease is still in an active stage or completely conquered by the acquired resistance of the individual concerned. It follows that a community long exposed to infection will show negative results in its infant members, which become increasingly positive as the life cycle advances. From these observations tuberculosis may be assumed to have played a prominent part in bringing about the decline of the native Fijian population which was not arrested until 1907. The disease had then been introduced into the country so recently that resistance to it was lacking in the adults as well as in the infants.

There are strong grounds for assuming that tuberculosis is an epidemic disease, differing only from measles, scarlatina, diphtheria and other epidemic diseases in the vast duration of its periodicity. In England and Scotland the deaths due to tuberculosis have been reduced by seventy-five per cent. during the last fifty years, and while the anti-tuberculosis measures which have been in force during the same period have played some part, modern thought tends to account for the progressive reduction in tuberculosis in Great Britain and America by the assumption that a prolonged epidemic is now well on the decline. The epidemic nature of tuberculosis has also an important bearing on its incidence in Fiji, and supports the supposition that since the natives first suffered from the ravages of this disease in a non-immune state they have steadily acquired the power to resist it. Their freedom from those environmental conditions, which favour the spread of tuberculosis, such as overcrowding, undernourishment and lack of fresh air should assist, now that the infection has been widely disseminated, in accelerating the pace at which their resistance is being established.

The most infectious forms of tuberculosis are its lung manifestations, and in this regard the ideal for both cure and prevention is to treat patients from the time when the disease is in its earliest stages in isolation, whether it be in hospitals or in sanatoria. Since it is in children that the greatest, perhaps the only proneness to infection exists, an alternative method is to treat the patients in their homes, and to remove their children in early infancy to special institutions. Both methods call for the enlightened co-operation of the community, and for great personal sacrifices on the part of the infected. They also presuppose early diagnosis, a matter of extreme difficulty even to the trained specialist, and they require almost unlimited financial resources if the organisation, including its essential institutions, is to be established and conducted at the public expense. In Great Britain and America it has been found impracticable to deal comprehensively with the tuberculosis problem on the principle of isolating all infectious cases, and as a compromise there exists in most places a system under which isolation of severe cases is combined with home visiting. The staff of home visitors is regarded as essential to the supervision of home treatment and the observation of contacts.

7. In Fiji tuberculosis would seem to be more frequent in its incidence in the Fijian than the Indian community, but if it was decided to establish a sanatorium it would have to be large enough to provide suitable accommodation for every member of a population of approximately 200,000, who was suffering from tuberculosis in an infectious form, and even if the infection rate was as low as one in a thousand, this would necessitate provision for two hundred patients. As the sanatorium would have to be substantially built, equipped and staffed, its capital cost would hardly be less than £150 per bed, or a total of £30,000, nor its recurrent costs less than £40 per bed, or an annual sum of £8,000. The proposal of the Council of Chiefs, referred to in paragraph 1, is, therefore, to contribute approximately one-fifth of the total capital cost, or two-fifths if the reckoning is made solely from the Fijian standpoint. Even assuming that the balance of the cost, both capital and recurrent, could be met by special taxation, it would seem evident that such heavy expenditure should only be incurred on a project which was known to have passed beyond the experimental stage to one of proved practical utility.

8. A sanatorium to be reasonably effective must fulfil the two cardinal conditions of ensuring the isolation of infectious cases to protect the public, and providing for the treatment along modern lines of its patients. Assuming that these conditions could be observed if the necessary funds were made available, a sum which would hardly be less than £2,000 per annum would have to be expended on employing a staff of scientific and other field workers to feed the sanatorium from the native villages and elsewhere. This must be added to the recurrent cost of the sanatorium to raise the estimate of £8,000 to, perhaps, £10,000 per annum.

9. To be successful the sanatorium method requires a ruthlessness in separating the infected from the uninfected members of a family, which would be unattainable without the fullest public co-operation, and public co-operation predicates a confidence in the system which is born of understanding. This is difficult to obtain even among the better educated and more advanced communities, and would certainly be unobtainable for generations among the great majority of the inhabitants of these islands. This co-operation on the part of the public is essential because while advanced cases of tuberculosis are discernable to the most untutored laymen the spotting of early cases baffles the specialist equipped with all the latest devices of science, and action in the early stages is essential in regard to both cure and prevention. It is a reasonable assumption that if a sanatorium was to be established in the existing circumstances, its use would be confined to advanced cases, whose inevitable early death would cause the system to be regarded as a certain road to another world, and doom it to failure at its inception.

10. In the absence, therefore, of sufficient financial resources to justify its treatment as an experiment, I consider it would be better to abandon, for the present, all thought of establishing one central sanatorium for the Colony, and assuming the acceptance of my own views it becomes necessary to decide whether the measures now in force are adequate, and if they are not how they should be revised and supplemented. The answer, in my opinion, is that they are not adequate, and that their chief deficiency lies in the absence of any scheme for determining the infection rate of tuberculosis. To be complete, such a scheme calls for complicated clinical, bacteriological and X-Ray examinations which could not be carried out in their entirety over the whole of Fiji. Accurate results would, however, be obtainable by a combination of field work, involving the use of the Mantoux tuberculin test, and the confirmation of these tests through the intensive examination of a cross section of the community from an established Health Centre. This will be one of the first and most important functions to be undertaken from the new Health Centre when it is established in Suva. The Health Centre will actually assist in meeting the tuberculosis problem in three ways. It will determine its incidence, provide modern facilities for its treatment, and educate medical students, nurses and the public in the means of prevention. A Mantoux test survey of the native villages has already been begun in anticipation of the confirmation of its results at a later date through the Health Centre.

11. With respect to treatment, where the ideal of full isolation is unattainable, it is the modern practice to divide the cases into those which can be treated in their homes with reasonable safety to themselves and their relatives, and those which, on account of their seriousness and their high degree of infectivity, must be treated in isolation. Under the present circumstances in Fiji beds are set aside on the verandahs of most Government hospitals for the treatment of tuberculous patients. These are mostly used for advanced cases, while for mild cases out door treatment is obtainable through the chain of dispensaries that are scattered over the Colony. The framework of a home visitor system exists in the Native Medical Practitioners and Welfare Workers, both paid and voluntary, and it is chiefly through these agencies that the problem is now being met. There is, however, a scarcity of trained workers, a defect which it is hoped to remedy by increasing the facilities for training additional nurses, and by affording more intensive training through the Health Centre to all public health officers, including the Native Medical Practitioners. A modified system of home visitors, combined with health education and treatment in isolation as far as it is practicable, in concurrence with periodic tuberculin surveys, offers the best method of treating the tuberculosis problem in the present circumstances in Fiji.

12. It remains to be decided whether the present means of affording treatment in isolation are adequate. There is a natural inclination to say no, and by laying too much stress on the ideal and too little on the practical to urge the establishment of what would amount to a fully equipped sanatorium in every district. The practical need is a well ventilated room or ward, constructed as simply and inexpensively as possible. In the larger hospitals, including Suva and Lautoka, new accommodation is required, although even here the makeshift use of verandahs is already providing a very practical substitute. In the smaller and provincial hospitals the requirements in accommodation could frequently be obtained by making minor structural alterations in the existing buildings, but even in these places tuberculosis cases are already being treated in isolation with reasonable efficiency.

It is realised that these may not be counsels of perfection, but it must be remembered that where some degree of imperfection is not tolerated there can be no progress.

13. The summary of my views on the position of tuberculosis in Fiji is as follows:—

- (a) its incidence is about equal in the Indian and Fijian communities;
- (b) it is less prevalent than it formerly was in the Fijians who are probably acquiring a resistance to it;
- (c) it is essential to obtain an accurate estimate of the extent of infection by means of the Mantoux test, combined with a tuberculosis unit in a health centre;
- (d) the Medical Department has not failed to give tuberculosis its due recognition, and both curative and preventive facilities have long been in existence;
- (e) the immediate future treatment of the problem should be by a combined system of isolation and health visitors; this can be put into effect progressively and economically by supplementing some of the existing services;
- (f) some extensions to the existing hospitals for the treatment of tuberculous cases are desirable;
- (g) an increase of health officers, and especially of trained welfare nurses is very desirable;
- (h) better facilities than those now existing are needed for the training in public health of medical and nursing students. This is vital to the successful combat of tuberculosis;
- (i) a central sanatorium would be too costly and its results too uncertain to afford a solution to the problem of tuberculosis, in the present circumstances, in Fiji.

14. The National Association for the Prevention of Tuberculosis has suggested that its organisation should be established in Fiji, and if satisfactory arrangements are concluded it may be expected to provide valuable information, especially in regard to anti-tuberculosis propaganda, and public interest in the efforts to control tuberculosis.

15. In conclusion I would say that whenever a Fijian Provincial Council expresses the desire to make its contribution towards the fight against tuberculosis, particularly in a district where no anti-tuberculosis facilities are in existence, it should be encouraged even if its efforts are limited to the building of a tuberculosis camp of native materials at a Native Medical Practitioner station, for it is better to have some place where cases can be isolated and treated, than to leave them to spread the infection in their villages.

RETURN OF DISEASES AND DEATHS AT THE COLONIAL WAR MEMORIAL HOSPITAL
FOR THE YEAR 1938.

Disease.	Admissions.					Deaths.	Disease.	Admissions.					Deaths.	
	Europeans.	Fijians.	Indians.	Others.	Total.			Europeans.	Fijians.	Indians.	Others.	Total.		
INFECTIOUS DISEASES.							DISEASES OF BLOOD AND LYMPHATIC SYSTEMS:							
Enteric Fever—Typhoid ..	2	4	13	3	22	5	CHRONIC INTOXICATIONS.							
Dysentery—Bacillary ..	17	56	79	17	169	17	Primary anæmia: pernicious ..	..	..	2	..	2	..
Dysentery—Amœbic ..	2	8	7	2	19	1	Primary anæmia: chlorosis ..	..	..	1	..	1	..
Measles ..	3	..	..	1	4	..	Secondary anæmia ..	..	1	18	..	19	5
Pertussis ..	1	1	3	1	6	2	Hæmophilia ..	..	..	3	..	3	1
Diphtheria ..	9	1	1	..	11	2	Lymphadenoma (Hodgkin's disease) ..	..	..	1	..	1	..
Influenza ..	9	52	50	38	149	..	Filariasis ..	..	10	2	..	12	2
Mumps ..	..	..	1	..	1	..	Alcoholism, acute and chronic ..	1	..	..	..	1	..
Varicella (Chicken-pox) ..	1	3	1	1	6	1	Lymphangitis and lymphadenitis ..	..	1	1	2	4	..
Tetanus ..	..	1	5	..	6	3	Total ..	1	12	28	2	43	8
Sapremia, Septicæmia and Pyæmia. ..	..	..	2	..	2	2	DISEASES OF NERVOUS SYSTEM.						
Dengue ..	..	1	..	..	1	..	Peripheral and multiple neuritis ..	..	..	1	..	1	1
Undulant Fever.. ..	..	..	1	..	1	..	Other forms of neuritis and neuralgia ..	3	1	2	..	6	..
Rheumatic Fever, Acute and Sub-acute Rheumatism ..	1	6	20	1	28	1	Myelitis ..	..	..	..	1	1	..
Glandular Fever ..	1	..	..	..	1	..	Tabes dorsalis (Locomotor ataxia).. ..	..	..	2	..	2	..
Framboesia (Yaws) ..	..	2	..	..	2	..	General paralysis of the insane ..	..	..	1	..	1	..
Leprosy ..	..	9	25	1	35	1	Meningitis, other than meningococcal or tuberculous ..	..	2	2	1	5	4
Febricula ..	..	..	1	..	1	..	Cerebral hæmorrhage, embolus or thrombosis.. ..	2	2	2	..	6	4
Fungus Diseases, e.g. Actinomycosis ..	..	1	..	..	1	..	Paralysis agitans and post encephalitic Parkinsonism ..	..	..	1	..	1	..
Other infectious diseases ..	..	1	1	..	2	1	Chorea ..	..	1	1	1	3	..
Total ..	46	146	210	65	467	36	Epilepsy ..	2	2	..	2	6	1	
TUBERCULOSIS AND VENEREAL DISEASE.							Migraine ..	..	..	1	..	1	..
Miliary Tuberculosis ..	..	..	..	1	1	1	Hysteria and Neurasthenia ..	..	..	1	..	1	..
Tuberculous Meningitis ..	..	1	1	2	4	3	Insanity and idiocy ..	..	..	1	..	1	..
Pulmonary Tuberculosis ..	3	25	20	6	54	16	Hemiplegia ..	..	..	8	..	8	1
Tuberculous Spine ..	1	..	..	2	3	..	Total ..	7	8	23	5	43	11
Tuberculosis of bones, joints, tendon sheaths and bursæ ..	..	3	..	1	4	1	DISEASES OF THE CIRCULATORY SYSTEM.						
Tuberculous lymphatic glands ..	..	1	1	2	4	..	Abnormalities of the cardiac rhythm ..	1	1	1	..	3	..
Abdominal Tuberculosis ..	..	..	..	1	1	1	Acute endocarditis and myocarditis ..	..	1	2	1	4	..
Primary Syphilis ..	1	1	..	..	2	..	Myocardial degeneration ..	2	2	15	2	21	14
Secondary Syphilis ..	..	..	1	..	1	..	Chronic valvular disease of the heart ..	5	4	12	1	22	9
Tertiary Syphilis ..	..	..	2	..	2	..	Congenital heart lesions ..	1	..	..	..	1	..
Acute Gonococcal infection ..	3	2	3	1	9	..	Pericarditis ..	..	..	1	..	1	..
Chronic Gonococcal Infection ..	..	..	3	1	4	..	Arteriosclerosis ..	2	..	..	..	2	..
Gonococcal Ophthalmia ..	..	..	1	..	1	..	Hyperpiesia ..	1	..	..	1	2	..
Total ..	8	33	32	17	90	22	Aneurism ..	..	..	1	..	1	..
BENIGN TUMOURS AND CYSTS.							Phlebitis, Thrombosis and Embolism ..	2	1	1	..	4	1	
Fibroma ..	1	..	..	..	1	..	Total ..	14	9	33	5	61	24
Sebaceous cyst ..	..	..	1	..	1	..	DISEASES OF THE RESPIRATORY SYSTEM.						
Hydatid cyst ..	..	1	..	..	1	..	Bronchitis, acute ..	4	6	15	7	32	4
Dental cyst ..	..	..	1	..	1	..	Bronchitis, chronic ..	5	2	6	2	15	3
Total ..	1	1	2	..	4	..	Bronchiectasis ..	1	..	..	..	1	..
MALIGNANT DISEASES.							Asthma ..	2	1	11	..	14	..	
Rodent ulcer ..	3	1	..	..	4	..	Pneumonia, lobar ..	..	4	8	3	15	6
Epithelioma of skin ..	1	..	..	..	1	1	Broncho-pneumonia ..	..	16	12	6	34	12
Carcinoma of lip and mouth ..	..	1	1	1	3	..	Hypostatic pneumonia ..	..	..	1	1	2	2
Carcinoma of pharynx ..	2	..	..	..	2	..	Abscess and gangrene of lung ..	..	..	1	1	2	1
Carcinoma of œsophagus ..	..	..	1	..	1	..	Pleurisy, dry ..	..	4	2	2	8	..
Carcinoma of stomach ..	1	2	1	1	5	2	Pleurisy with effusion ..	1	4	5	1	11	..	
Carcinoma of rectum ..	1	..	2	..	3	1	Empyema ..	1	..	..	..	1	..
Carcinoma of gallbladder and bile ducts ..	..	2	..	..	2	..	Other diseases of the respiratory system.. ..	2	1	..	..	3	..
Carcinoma of urinary bladder ..	..	..	1	..	1	..	Total ..	16	38	61	23	138	28
Carcinoma of uterus ..	1	..	..	4	5	1							
Secondary carcinoma ..	..	..	1	..	1	1							
Carcinoma of other organs ..	..	2	1	..	3	2							
Total ..	9	8	8	6	31	8								
DISEASES OF METABOLISM AND THE ENDOCRINE ORGANS.														
Diabetes Mellitus ..	2	1	16	..	19	4								
Addison's disease ..	..	..	..	1	1	..							
Other endocrine disorders ..	..	1	..	..	1	1							
Epidemic dropsy ..	1	..	..	..	1	1							
Total ..	3	2	16	1	22	6								

RETURN OF DISEASES AND DEATHS AT THE COLONIAL WAR MEMORIAL HOSPITAL
FOR THE YEAR 1938.—*continued.*

Disease.	Admissions.					Deaths.	Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.			Europeans.	Fijians.	Indians.	Others.	Total.	
DISEASES OF THE ALIMENTARY SYSTEM.							DISEASES OF THE MALE ORGANS.						
Diseases of the teeth and gums	5	3	2	..	10	..	Phimosis and paraphimosis ..	1	..	..	2	3	..
Foreign body in the œsophagus	2	..	1	..	3	..	Hydrocele	1	8	4	1	14	..
Dyspepsia, acute, chronic and functional gastric disorders ..	4	1	7	2	14	..	Epididymitis and orchitis ..	1	4	3	..	8	..
Acute gastritis .. ..	..	..	7	2	9	..	Ectopia testis, imperfectly descended or undescended testicle	1	..	..	..	1	..
Gastric ulcer	7	..	3	1	11	..	Enlarged prostate gland ..	..	1	1	..	2	..
Duodenal ulcer	2	..	2	..	4	..	Elephantiasis of the scrotum ..	..	2	..	1	3	..
Perforated peptic ulcer ..	..	..	..	1	1	1	Total	4	15	8	4	31	..
Constipation .. ..	..	7	15	4	26	..	DISEASES OF PREGNANCY, LABOUR AND THE PUERPERIUM.						
Diarrhœa	2	3	1	1	7	..	Normal pregnancy .. ..	..	5	31	5	41	..
Enteritis and gastro-enteritis ..	7	23	33	7	70	2	Normal labour	1	81	114	44	240	..
Intestinal obstruction .. ..	..	..	2	..	2	..	Threatened abortion	1	1	11	2	15	..
Foreign body in the stomach and intestines .. ..	..	..	3	..	3	..	Abortion or miscarriage ..	3	..	9	3	15	..
Colitis	2	2	4	1	9	..	Hydatidiform mole	1	..	1	..	2	..
Intestinal parasites	1	4	13	..	18	2	Extra-uterine pregnancy ..	..	..	1	..	1	..
Peri-anal & ischio-rectal abscess	3	1	6	..	10	..	Hyperemesis gravidarum ..	1	..	1	..	2	..
Anal fissure and fistula ..	..	..	1	..	1	..	Eclampsia. .. ..	..	..	1	..	1	..
Hæmorrhoids and rectal abscess	1	..	6	..	7	..	Abnormal presentations ..	..	1	1	..	2	2
Pruritus ani	1	..	..	..	1	..	Multiple pregnancy	1	..	..	1	2	..
Amœbic hepatitis and hepatic abscess .. ..	..	1	1	..	2	1	Contracted pelvis	1	..	..	..	1	..
Catarrhal jaundice .. ..	..	1	..	..	1	..	Forceps deliveries .. ..	..	2	..	..	2	..
Cirrhosis of the liver	1	..	..	..	1	..	Cæsarean section	2	..	1	1	4	..
Cholecystitis and cholangitis ..	4	1	2	1	8	..	Stillbirths (These are not registered as admissions) ..	..	..	..	..	10	..
Cholelithiasis	3	..	1	..	4	..	Retained placenta .. ..	..	2	1	..	3	1
Other diseases of the alimentary system.. ..	3	1	2	..	6	..	Puerperal sepsis.. ..	..	1	6	..	7	2
Total	48	48	112	20	228	6	Other intercurrent infections of the puerperium .. ..	..	1	2	1	4	1
DISEASES OF THE APPENDIX AND PERITONEUM.							Total	11	94	180	57	342	6
Appendicitis, chronic and recurrent	2	..	5	1	8	..	DISEASES OF WOMEN.						
Appendicitis, subacute	8	..	4	5	17	..	Disorders of menstruation ..	2	..	7	2	11	..
Appendicitis, simple acute ..	7	3	4	1	15	1	Retroversion of the uterus ..	2	..	1	..	3	..
Appendicitis, with localised abscess .. ..	..	..	1	1	2	..	Cystocele and rectocele ..	1	..	..	..	1	..
Appendicitis, with general peritonitis .. ..	..	..	..	1	1	..	Uterine prolapse .. ..	..	..	1	..	1	..
Acute peritonitis	1	1	2	..	4	2	Infections of the vulva & vagina	..	..	7	1	8	..
Total	18	4	16	9	47	3	Chronic endometritis & cervicitis	1	1	1	1	4	..
HERNIA.							Chronic metritis (fibrosis uteri) ..	..	..	1	..	1	..
Inguinal hernia, oblique or indirect	3	5	4	3	15	..	Salpingitis & oophoritis (except tuberculous) .. ..	..	..	7	2	9	..
Femoral hernia	1	..	..	..	1	..	Pelvic abscess .. ..	..	1	1	1	3	..
Ventral hernia .. ..	..	1	..	..	1	1	Benign uterine tumours ..	2	3	..	..	5	1
Strangulated hernia .. ..	..	4	1	..	5	1	Benign ovarian tumours & cysts	..	..	1	1	2	..
Total	4	10	5	3	22	2	Total	8	5	27	8	48	1
DISEASES OF THE URINARY SYSTEM.							DISEASES OF THE BREAST.						
Acute nephritis	1	2	4	..	7	..	Acute mastitis & breast abscess	..	3	2	..	5	..
Chronic nephritis.	1	1	4	..	6	2	Chronic interstitial mastitis ..	1	..	..	..	1	..
Hydronephrosis & pyonephrosis	..	3	..	..	3	1	Benign tumours and cysts ..	..	..	1	..	1	1
Urinary calculi, renal .. ..	..	..	1	..	1	..	Total	1	3	3	..	7	1
Urinary calculi, ureteric. ..	..	..	..	1	1	..	DISEASES OF THE NEW-BORN, INFANCY AND EARLY CHILDHOOD.						
Cystitis, acute	2	..	..	1	3	..	Harelip and cleft palate ..	..	..	1	..	1	..
Cystitis, chronic .. ..	..	..	1	..	1	..	Congenital deformities, brain and spinal cord .. ..	..	2	1	..	3	1
Urethral stricture .. ..	..	..	2	..	2	..	Congenital deformities, urogenital .. ..	..	..	1	..	1	1
Urinary fistula .. ..	..	..	1	..	1	..	Other congenital malformations	..	..	1	..	1	1
Other diseases of the urinary system.. ..	3	..	2	1	6	..	Sepsis of cord and umbilicus ..	..	1	..	1	2	2
Retention of urine .. ..	..	1	6	..	7	..	Prematurity .. ..	..	2	4	..	6	6
Uræmia	1	..	1	..	2	2	Malnutrition and marasmus ..	..	1	4	..	5	1
Total	8	7	22	3	40	5	Infantile convulsions .. ..	..	1	3	1	5	3
							Born in hospital	3	73	97	41	214	4
							Admitted, not ill, with mother ..	..	..	2	..	2	..
							Total	3	80	114	43	240	19

RETURN OF DISEASES AND DEATHS AT THE COLONIAL WAR MEMORIAL HOSPITAL
FOR THE YEAR 1938.—*continued.*

Disease.	Admissions.					Deaths.	Disease.	Admissions.					Deaths.
	Europeans.	Fijians.	Indians.	Others.	Total.			Europeans.	Fijians.	Indians.	Others.	Total.	
DISEASES OF BONES, JOINTS, MUSCLES AND TENDONS.							DISEASES OF THE SKIN.						
Chronic and relapsing osteomyelitis .. .. .	..	..	1	1	2	..	Furunculosis	3	4	2	..	9	1
Periostitis	3	1	1	1	6	..	Carbuncle	4	2	2	..	8	1
Other diseases of bone .. .. .	..	..	1	1	2	..	Abscess	2	19	19	5	45	..
Synovitis	1	..	1	..	2	..	Cellulitis .. .. .	..	..	1	1	2	..
Acute arthritis .. .. .	..	1	1	..	2	..	Erysipelas .. .. .	..	2	1	..	3	..
Chronic arthritis, osteoarthritis, and rheumatoid arthritis ..	1	1	1	..	3	..	Dermatitis	5	2	2	2	11	..
Ankylosis of joints	1	..	..	..	1	..	Impetigo	5	1	1	1	8	..
Deformities of joints .. .. .	..	1	..	..	1	..	Scabies .. .. .	..	1	..	2	3	..
Injuries to the semi-lunar cartilages .. .. .	..	1	..	..	1	..	Ringworm .. .. .	..	4	..	2	6	..
Teno-synovitis	1	1	..	..	2	..	Sinuses .. .. .	..	6	1	2	9	1
Bursitis	2	..	..	..	2	..	Ulcers	3	1	1	2	7	..
Ingrowing toenails	1	..	..	..	1	..	Gangrene .. .. .	..	4	..	..	4	3
Postural deformities .. .. .	..	..	1	..	1	..	Elephantiasis .. .. .	..	1	..	..	1	..
Lumbago .. .. .	..	..	1	..	1	..	Other skin diseases .. .. .	..	..	1	..	1	..
Total	10	6	8	3	27	..	Total	22	47	31	17	117	6
AFFECTIONS DUE TO EXTERNAL CAUSES.							DISEASES OF THE EYE.						
Poisoning, other than food poisoning .. .. .	..	2	3	..	5	..	Conjunctivitis	1	4	1	1	7	..
Burns and scalds	1	9	7	4	21	1	Trachoma .. .. .	..	..	2	..	2	..
Bruises, abrasions & contusions	1	4	6	3	14	..	Pterygium .. .. .	..	2	..	..	2	..
Wounds, incised, punctured, contused and lacerated ..	8	16	25	8	57	..	Iritis	1	..	..	..	1	..
Septic wounds	11	24	24	10	69	..	Glaucoma .. .. .	..	..	2	2	4	..
Embedded foreign bodies ..	1	..	1	1	3	..	Cataract .. .. .	..	..	1	..	1	..
Scalp wounds .. .. .	..	..	3	..	3	..	Corneal ulcer and sequela ..	..	5	4	1	10	..
Insect bites and other stings from poisonous animals ..	2	..	..	..	2	..	Injury to the eye .. .. .	..	2	1	..	3	..
Shock following injury .. ..	..	..	1	1	2	..	Foreign body in the eye ..	1	..	..	..	1	..
Injuries to muscles, tendons, and ligaments	3	1	2	..	6	..	Total	3	13	11	4	31	..
Sprains to joints .. .. .	..	1	..	1	2	..	DISEASES OF THE EAR, NOSE AND THROAT.						
Dislocations of joints .. ..	..	..	1	..	1	..	Eczcma and furuncle of the external auditory meatus ..	..	..	1	..	1	..
Head injuries and cerebral concussion	1	3	1	2	7	..	Foreign bodies in the ear ..	..	1	1	..	2	..
Injuries to the abdomen .. ..	..	..	..	..	..	..	Acute otitis media .. .. .	..	4	2	..	6	..
Injuries to the internal viscera ..	..	..	1	..	1	..	Chronic otitis media .. .. .	..	..	1	1	2	..
Injuries to the spine and back ..	..	1	1	..	2	..	Mastoiditis .. .. .	..	1	2	1	4	..
Infections of the hands	1	2	1	..	4	..	Epistaxis .. .. .	..	1	..	..	1	..
Fracture of—							Nasal polypi .. .. .	..	..	..	1	1	..
Jaw and facial bones	2	..	..	..	2	..	Maxillary sinusitis	2	..	1	1	4	..
Skull .. .. .	..	1	..	..	1	1	Frontal sinusitis .. .. .	..	1	..	..	1	..
Spinal column .. .. .	..	..	1	..	1	1	Pharyngitis	1	..	2	1	4	..
Pelvis .. .. .	..	..	2	..	2	..	Acute tonsillitis	4	2	3	1	10	..
Ribs	2	..	..	..	2	..	Enlarged tonsils and adenoids	4	1	3	..	8	..
Clavicle	1	..	..	..	1	..	Laryngitis .. .. .	..	..	..	1	1	..
Humerus	3	1	2	..	6	..	Peritonsillar abscess (quinsy) ..	..	..	6	..	6	..
Radius .. .. .	..	..	2	..	2	..	Total	11	11	22	7	51	..
Ulna	1	..	2	..	3	..	ILL-DEFINED DISEASES.						
Radius and ulna .. .. .	..	2	3	..	5	..	Admitted for investigation or observation	21	19	23	11	74	1
Carpus, metacarpus and phalanges .. .. .	..	1	..	..	1	..	Pyrexia of unknown origin ..	2	..	1	1	4	..
Femur .. .. .	..	1	4	2	7	1	Undiagnosed	1	..	4	..	5	..
Tibia .. .. .	..	3	2	..	5	..	Orphans .. .. .	..	17	..	..	17	5
Fibula .. .. .	..	1	1	..	2	..	Parent, not ill, admitted with child .. .. .	..	17	31	13	61	..
Tibia and fibula	2	4	2	..	8	..	Other ill defined diseases ..	2	..	2	..	4	..
Tarsus, metatarsus and phalanges .. .. .	..	..	2	..	2	..	Debility	4	3	6	..	13	..
Malunited fractures .. .. .	..	1	..	..	1	..	Senility .. .. .	..	..	10	1	11	3
Total	40	78	100	32	250	4	Admitted after anæsthesia for recovery	3	1	..	..	4	..
							Total	33	57	77	26	193	9
							Grand totals of all cases ..	328	734	1152	359	2573	205

SURGICAL OPERATIONS PERFORMED AT THE COLONIAL WAR MEMORIAL HOSPITAL
DURING THE YEAR 1938.

Blood vessels—	No.	iv. Obstetric—	No.
Excision of varicose vein of lip.	1	Induction of labour, with laminaria tent	1
Muscles, Tendons, Nerves, Bursæ —		Induction of labour, with intra-uterine tube	1
Tendon sutures	3	Forceps delivery	3
Tenotomy of Tendo Achillis	2	Cæsarean section. (One for twins)	4
Excision of bursa	1	Removal of retained placenta	1
Bones—		Perforation of foetal skull and extraction for face presentation	1
i. Fractures—		Breast—	
Applications of plaster	10	Incision of breast abscess	1
Applications of splints	2	Thorax—	
Reductions of fractures under general anæsthesia	5	Drainage of empyema	1
Reductions of fractures under local anæsthesia	2	Eye—	
Open reductions of fractures	3	Curretage of lachrymal sinus	1
ii. Deformities—		Excision of ulcer of lower eyelid	1
Manipulation and application of plaster for Talipes	1	Enucleation of eye	4
iii. Infections—		Iridectomy, for prolapse in wound of eye	1
Incision of periosteal abscess	1	Ear, Nose, Throat—	
Removal of sequestrum	1	Syringing of ear	11
Joints—		Mastoidectomy and drainage of mastoid abscess	2
Reduction of dislocated shoulder	1	Removal of nasal polypi	1
Manipulations of joints	3	Exploration of maxillary antrum	1
Lymphatic System—		Tonsillectomy and Adenectomy. (Guillotine)	5
Excision of glands of neck.	1	Adenectomy	3
Curettage of glands.	2	Skin grafts—	
Alimentary System—		Thiersch. (Includes removal of grafts from a donor)	4
i. Mouth, Lips, Teeth—		Reverdin	2
Harelip	1	Skin and Appendages—	
Removal of dental cyst	1	Suturings	102
Teeth extractions	110	Incisions of septic areas	123
ii. Abdomen—		Removal of toe-nails	3
Laparotomy	7	Curettage of sinuses	11
Gastro-enterostomy	2	Removal of sebaceous cysts	3
Appendicectomy	26	Burns treated with Tannic Acid	4
Drainage of appendix abscess	4	New growths—	
Drainage of peritoneum	2	Removal of ganglion of wrist	1
Drainage of abdominal abscess	1	Removal of growth of cheek	1
Exploration of abdominal swelling	1	Removal of cyst of thigh	1
iii. Liver and Gallbladder—		Removal of odontoma	1
Cholecystotomy	2	Removal of fibroma	1
iv. Rectum and Anus—		Removal of mucous cyst of mouth	1
Ligature of Hæmorrhoids	5	Amputations—	
Excision of Hæmorrhoids	2	i. Fingers	3
Incision of Ischio-rectal abscess	7	ii. Leg, seven inches below knee	2
Curettage of Anal fistula	1	iii. Leg, at site of election	3
Sigmoidoscopy	6	Removal of foreign bodies—	
Colostomy for imperforate anus	2	i. Eye	15
Urinary System—		ii. Ear	1
Suprapubic cystostomy	3	iii. Nose	2
Cystoscopy	7	iv. Throat	1
Dilatation of uréthral stricture	2	v. Hand and fingers	9
Male genital organs—		vi. Arm	1
Circumcision	37	vii. Foot	1
Tapping of hydrocele	1	viii. Leg	1
Radical cure of hydrocele (one bilateral)	11	ix. Vagina	1
Orchidopexy for ectopia testis	1	General—	
Amputation of filarial scrotum	3	Exploration of hand	1
Prostatectomy	2	Examination under anæsthetic	3
Hernia—		Evacuation of psoas abscess	2
Radical cure of inguinal hernia. (One bilateral, one combined with circumcision, one with radical cure of hydrocele)	13	Removal of tissue for section	1
Radical cure of femoral hernia	1	Surgical diathermy	5
Radical cure of incisional hernia	1	Application of Radium	1
Relief of strangulated inguinal hernia	5	Total	354
Gynæcological, and Obstetric—		Grand total	700
i. Vagina—		Anæsthetics given—	
Perineorrhaphy	1	I. General—	
Freeing perineal adhesions	1	(a) Inhalation—	
Colpotomy	1	i. Chloroform and Ether	252
ii. Uterus—		ii. Ethyl Chloride and Ether	18
Dilatation of cervix and curettage of uterus	15	iii. Ethyl Chloride	28
Excision of fibroid from lip of cervix	1	iv. Ether	5
Removal of retained products of conception	11	v. Gas and Oxygen	4
Ventrosuspension	1	vi. Gas and Oxygen and Ether	2
Panhysterectomy	1	vii. Evipan and Ether	1
Total hysterectomy	2	viii. Local and Chloroform and Ether	1
Subtotal hysterectomy	1	(b) Intravenous—	
Excision of broad ligament cyst and salpingectomy	1	Evipan	12
iii. Ovary and tubes—		II. Local	191
Salpingectomy for ectopic gestation	1	III. Spinal	1
Removal of twisted ovarian cyst	1	Total	515
Drainage of pelvic abscess	2		
Total	346		

SUMMARY OF METEOROLOGICAL OBSERVATIONS AT SUVA FOR THE YEAR 1938.

Months.	Mean Pressure in inches. (Reduced to 32° Fahr. 45° Lat. and M.S.L.)		Air Temperature (F°)												Mean Dew Point. (Degrees)		Mean Vapour Pressure in Millibars.		Mean Relative Humidity (Saturation= 100)		Mean Amount of Cloud. (0-10)	
			Mean Dry Bulb.		Mean Wet Bulb.		Means of		Mean	Absolute Max. and Min.												
														Max.									Min.
							Max.	Min.		Date.	Min.	Date.										
January	8h. 29-783	14h. 29-747	8h. 80-4	14h. 84-8	8h. 76-4	14h. 78-2	8h. 86-8	14h. 75-7	8h. 81-3	8h. 89	14h. 71	8h. 1, 7, 9, 10, 11, 30	14h. 21	8h. 29-3	14h. 30-0	8h. 82-7	14h. 74-0	8h. 6-8	14h. 6-4			
February	29-748	29-701	80-9	86-1	77-3	78-9	87-6	76-1	81-9	91	72	17, 18	28	30-5	30-8	84-7	72-8	6-1	6-2			
March	29-854	29-808	79-3	83-9	74-8	76-3	85-9	74-5	80-2	92	71	1	12, 24	27-6	27-8	80-9	71-0	5-4	6-0			
April	29-893	29-840	79-1	84-2	75-3	77-1	85-3	73-7	79-5	88	69	3, 4, 5	22	28-4	28-8	83-6	71-9	3-8	5-1			
May	29-938	29-884	77-0	81-1	73-0	75-1	82-5	73-0	77-7	87	63	3, 4, 19	29	26-2	27-1	82-6	75-1	6-3	7-0			
June	29-950	29-897	74-4	79-7	71-7	73-5	80-9	70-9	75-9	86	65	5	8, 9	25-5	25-6	87-5	74-3	5-8	6-5			
July	29-963	29-907	74-0	79-4	71-0	72-9	81-5	69-5	75-5	88	62	21	21	24-6	24-7	86-0	72-3	4-4	5-7			
August	29-993	29-943	75-0	79-3	71-7	73-2	80-9	71-2	76-1	88	66	1	10	25-0	25-3	84-7	74-4	6-8	7-5			
September	29-974	29-921	75-2	78-8	71-7	73-0	81-0	71-0	76-0	88	68	10, 22	5	24-9	25-2	83-9	76-1	8-1	7-2			
October	29-974	29-919	76-6	79-8	72-7	73-9	82-3	71-8	77-0	89	68	12	1, 25	25-8	26-0	82-8	75-4	7-3	7-8			
November.....	29-817	29-774	79-0	81-5	74-9	76-1	83-8	73-3	78-6	87	71	4	4, 10, 29	27-7	28-5	82-1	78-0	7-3	7-8			
December	29-802	29-757	78-5	81-8	74-9	76-4	83-9	73-5	78-7	89	69	12	25	28-0	28-6	84-5	78-1	7-9	7-8			
Year	29-891	29-842	77-5	81-7	73-8	75-4	83-5	72-9	78-2	..	..	.....	....	27-0	27-4	83-8	74-5	6-3	6-8
Mean	8h. and 14h. 29-866		..	..	..	..	..	..	..	..	..	.....	....	..	..	..	..	..	..

SUMMARY OF METEOROLOGICAL OBSERVATIONS AT SUVA FOR THE YEAR 1938.—*continued.*

Months.	Total Rainfall (Inches.)	Sunshine. (Hours and Tenths.)		Miles of Wind.		Weather. No. of days of						Wind. Number of Observations.																															
		Total.	Mean daily	Total.	Mean velocity (m.p.h.)	Hail.	Thdr Stms	Gales.	Clear Sky			Overcast	N		N.E.		E.		S.E.		S.		S.W.		W.		N.W.		Calms.	Var.													
									8h	14h	8h																				14h	8h	14h	8h	14h	8h	14h	8h	14h	8h	14h	8h	14h
January	12·53	187·1	6·0	4627·2	6·2	0	0	0	2	3	11	11	5	2	4	4	6	9	3	9	1	4	0	1	1	1	2	0	9	1	0	0											
February	8·45	183·2	6·5	5069·6	7·5	0	2	0	1	2	10	7	8	5	12	8	1	9	0	6	0	0	0	0	0	0	0	0	7	0	0	0											
March	8·54	178·7	5·8	4725·6	6·4	0	3	0	7	1	7	8	7	3	4	6	7	11	1	5	1	2	0	1	0	1	1	1	10	1	0	0											
April	4·96	196·1	6·5	4051·2	5·6	0	0	0	5	2	4	5	7	0	9	4	3	19	2	6	0	0	0	1	0	0	0	9	0	0	0	0											
May	11·58	115·6	3·7	5258·4	7·1	0	0	0	4	1	12	13	2	3	6	7	6	11	4	6	3	3	0	0	1	0	0	10	0	0	0	0											
June	4·84	137·2	4·6	3962·4	5·5	0	2	0	5	0	7	9	10	3	5	4	2	9	2	6	1	4	0	2	1	0	0	9	0	0	0	0											
July	14·32	170·7	5·5	4342·0	5·8	0	2	0	9	2	6	5	11	4	3	8	0	7	3	5	0	2	0	3	0	1	1	0	13	0	0	1											
August	7·05	122·0	3·9	5477·6	7·4	0	0	0	2	1	13	15	6	1	7	6	8	13	3	8	1	2	0	1	0	0	0	6	0	0	0	0											
September	15·68	126·9	4·2	4940·2	6·9	0	0	0	0	0	16	15	8	2	8	3	8	18	2	4	0	3	0	0	0	0	0	4	0	0	0	0											
October	19·61	130·5	4·2	5301·6	7·1	0	4	0	3	1	14	17	2	1	3	5	10	12	4	10	0	3	0	0	2	0	0	10	0	0	0	0											
November.....	20·77	155·2	5·2	5450·4	7·6	0	7	0	1	0	12	14	3	0	5	5	11	15	4	5	0	5	3	0	1	0	0	3	0	0	0	0											
December	30·52	130·3	4·2	5392·0	7·2	0	5	2	0	0	17	19	6	2	10	8	8	10	2	5	2	2	0	2	0	1	0	3	0	0	0	0											
Year ...	158·85	1833·5	5·0	58598·2	6·7	0	25	2	39	13	129	138	75	26	76	68	70	143	30	75	9	30	3	11	5	5	4	4	93	2	0	1											
Mean ..	...	...	...	.....	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

EXTREMES FOR THE YEAR.

Highest Pressure—30·129" at 8 a.m. on 14th August.
Lowest Pressure—29·403" at 2 p.m. on 27th February.
Highest Temperature in Shade—92° on 1st March.
Lowest Temperature in Shade—62° on 21st July.
Greatest Range—19° on 22nd September.
Least Range—1° on 15th July.
Most Rain in 24 hours—10·62" on 21st December.
Maximum Wind Velocity—63 m.p.h. from N.N.E. at 1640 on 21st December.

